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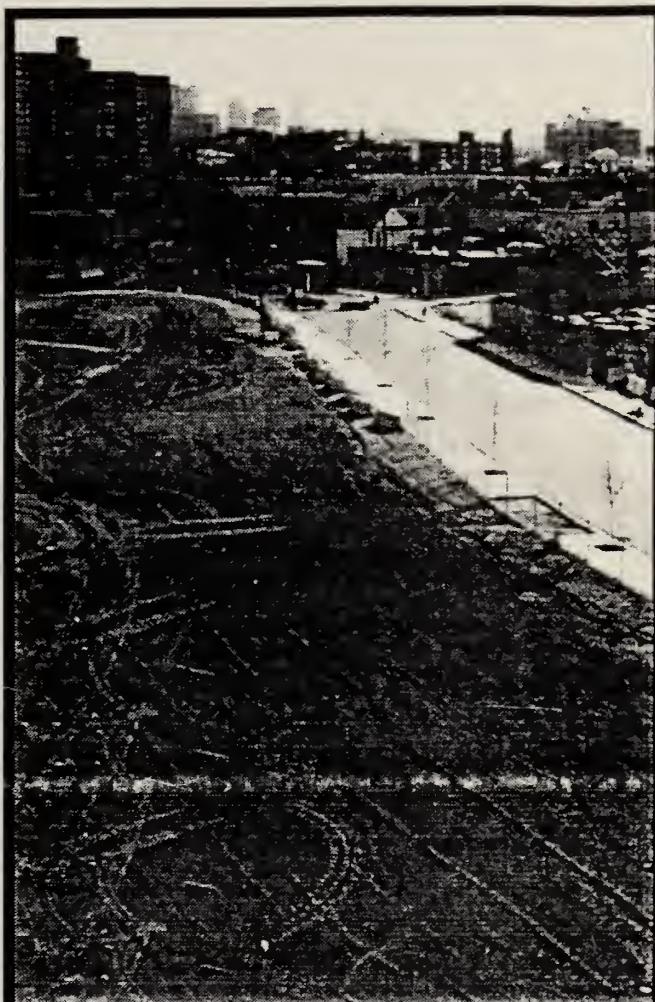
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Metro Boston Brownfields Status Report

From Eyesore to Opportunity:



Financing & Other Strategies to Recycle Contaminated Sites

June 1995

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Metropolitan Area Planning Council



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ABOUT THIS REPORT

The Metropolitan Area Planning Council (MAPC) is the officially designated regional planning agency for 101 cities and towns of metropolitan Boston. The Council helps its member communities plan in the areas of economic development, land use, housing, demographics, transportation, and environmental quality.

This report is a “Special Project” of the Inner Core Committee (ICC), a subregion of the Metropolitan Area Planning Council. ICC communities are: Arlington, Belmont, Boston, Braintree, Brookline, Cambridge, Chelsea, Everett, Holbrook, Lynn, Malden, Medford, Melrose, Nahant, Newton, Quincy, Randolph, Revere, Saugus, Somerville, Waltham, Watertown, and Winthrop.

Project staff wishes to thank all those who provided information, suggestions, and support in preparing this document.

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METRO BOSTON BROWNFIELDS STATUS REPORT

FROM EYESORE TO OPPORTUNITY: Financing & Other Strategies to Recycle Contaminated Sites

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METRO BOSTON BROWNFIELDS STATUS REPORT

Executive Summary

- Environmental contamination is one of the biggest roadblocks to the redevelopment of blighted urban sites, or “Brownfields.” It contributes to developer preferences for suburban “Greenfields,” thus promoting sprawl, and it contributes to urban disinvestment. On behalf of MAPC’s Inner Core communities, this report explores financing and other strategies to expedite cleanup.
- The Brownfields issue is attracting attention nationwide. In addition to the historic concern for public health and safety, what is new in the debate is the link between environmental cleanup and economic reuse.
- Both state and federal governments have recently adopted new approaches. The state introduced the Massachusetts Contingency Plan (MCP) and the Clean Sites Initiative or Covenant-not-to-Sue, while the federal EPA announced the Brownfields Action Agenda. For both, important legislation is on the drawing board, presenting an opportunity to influence future policy and programs.
- There are many financing models that could be adapted to Brownfields cleanup (see Matrix 1). Very few states have financing programs directly linking environmental cleanup with economic reuse (see Matrix 2).
- Options for planning a financing program need to be considered in terms of target groups, purposes, form of assistance, type of site, and extent of the problem.
- Among the chief initial barriers to recycling Brownfields is often the money for preliminary assessments to get basic environmental information to make a site marketable.
- As the case study shows, no combination of low-cost financing and pooled-risk insurance is likely to allow an urban Brownfields site in a blighted area to compete favorably in economic terms with a suburban Greenfield.
- Other site preparation costs common to blighted urban sites (e.g., the demolition of buildings and the removal of non-hazardous debris) may add enough to be deal-breakers in the economic comparison of blighted vs. unused sites.
- Brownfields programs should emphasize neighborhood revitalization, job creation, and tax revenues rather than parity with Greenfields, an almost impossible goal.

- Given the many advantages of Greenfields, urban communities with blighted sites should develop economic reuse strategies and marketing plans, targeting appropriate types of firms.
- The study recommends that the Inner Core:
 - Organize a Brownfields workshop, convene stakeholders, and form a Regional Brownfields Working Group.
 - Create an Inner Core Brownfields Reuse Plan.
 - Work to generate a database to link environmental and economic development data.
 - Work with DEP, EOEA/MOBD, the General Court, and stakeholders to shape and pass a financing bill which meets the Core's needs. Provisions, detailed in the report's findings, include linking environment and economic reuse in planning and funding criteria, encouraging multi-property and area-wide assessments, funding grants and loans, and targeting to fill financing gaps.
 - Set up a pilot multi-community pool of Brownfields sites to test joint approaches and cut costs.

FROM EYESORE TO OPPORTUNITY: Financing & Other Strategies to Recycle Brownfields

Background

The Inner Core Project

In its recent survey of underutilized industrial sites,¹ MAPC's Inner Core subregion found that one of the major roadblocks to urban redevelopment is the threat posed by environmental contamination. To address this problem, the Core undertook a follow-up project to encourage the redevelopment of underutilized urban industrial properties by addressing the problem of environmental contamination, focusing especially on financing options but pursuing other strategies as well.

This report is the product of that project. It begins with a discussion of the issues around contaminated commercial and industrial sites, or "Brownfields," and the current initiatives at the state and federal level to expedite cleanup. It then presents an analysis of potential financing program models and a review of nationwide financing programs in place. It concludes with recommendations for further action, including the components of recommended financing legislation. The work is informed by an in-depth case study, appearing in the Appendix, which explores the issues facing developers, lenders, and others by analyzing cleanup and reuse costs under alternative financing scenarios and comparing the results with hypothetical, undeveloped "Greenfields."

This report also includes information designed to help communities deal with contaminated sites. It presents four "success story" examples drawn from metro Boston, and it includes a list of contacts and resources (see Appendix).

Brownfields is a national issue very much on the forefront of public debate and action. Events, policies, and programs are moving quickly. This report reflects only one moment in time in a rapidly changing field.

Brownfields, Greenfields, and Sprawl

In metropolitan areas nationwide, urban Brownfields are being left behind as developers and lenders seek out undeveloped Greenfields, more often in the suburbs or on the region's periphery. The presence of Brownfields in core cities is part of a pattern of urban disinvestment, while the preference for suburban Greenfields contributes to sprawl.

¹ The results appear in MAPC's Cooperative Economic Development Strategy and Site Survey (1992), funded by a Strategic Planning Grant from the Executive Office of Communities and Development.

Productive redevelopment of urban Brownfields will help revitalize core areas, create jobs, and promote concentrated development.

This issue is attracting attention nationwide. Although there has been a long history of interest in cleanup of hazardous waste sites, the attention has been focused solely on public health and safety issues. What is new in the Brownfields vs. Greenfields debate is the recognition of the relationship between environmental cleanup and economic development. Recent initiatives nationwide consider economic redevelopment potential as a factor in setting remediation priorities, seeking to expedite the cleanup of sites with reuse potential located in distressed areas.

The desire to reuse Brownfields, however, cannot be an excuse for inadequate cleanup. Proceeding in tandem with the Brownfields movement is the environmental justice movement, which recognizes that environmental hazards of all types are more prevalent in minority areas and seeks remedies to this injustice. Both the level of cleanup and the environmental impacts of the new use must be considered within this context.

Cleanup Initiatives in Massachusetts

The State's Superfund Law (Chapter 21E)

Massachusetts has had a Superfund Law -- Chapter 21E -- since 1983. It requires an inventory of confirmed and suspected hazardous waste sites and includes standards and procedures for cleanup. It also established strict joint and several liability, meaning that everyone -- municipalities, innocent owners, lenders, and others -- can be held fully liable for all the contamination on a site. The state has provided \$85 million in bond funds for emergency remediation of sites posing an imminent health risk where no Potentially Responsible Party (PRP) can be readily identified. The fund is expected to be fully expended shortly, and a new bond bill (H. 123), authorizing \$100 million for discovery and cleanup, is pending.

By 1990, it had become apparent that Ch. 21E was not producing adequate results. Less than 25% of the confirmed and suspected abandoned or "orphan" sites were being assessed or remediated, and the backlog of sites in need of attention was growing rapidly. An Advisory Committee was set up to recommend changes.

The New Waste Site Cleanup Program

A number of changes have been made since then to address the perceived barriers to cleanup. The new Waste Site Cleanup Program limits the state's role and expands that of private parties. Regulations are set forth in the Massachusetts Contingency Plan (MCP). Although more details of the Massachusetts program appear in the Appendix, key features include:

MASSACHUSETTS CONTINGENCY PLAN

Key Features

- ★ reliance on Licensed Site Professionals (LSPs);
- ★ procedures and incentives for cleaning up small problems quickly;
- ★ limits on oversight by the Department of Environmental Protection (DEP);
- ★ ability to tailor cleanups to future activities expected at the site; and
- ★ reduce the uncertainty and risk to lenders and PRPs.

The state is currently developing procedures to implement facets of the new program.

In relying heavily on private parties and minimizing state oversight, Massachusetts, along with Ohio and perhaps one or two other states, differs from the more prevalent, centralized “command and control” model. In most states, the administering agency plays a greater role in assessment, remediation, oversight, and/or approval. This distinction is important in terms of how federal laws relate to state programs (see discussion of federal laws, below).

The Clean Sites Initiative

As a companion piece, DEP, the Executive Office of Economic Development (EOEA), and the Attorney General’s office recently launched the Clean Sites Initiative, a pilot redevelopment program to encourage prospective buyers and tenants of contaminated properties in Economic Target Areas (ETAs) to clean up and redevelop these properties. In exchange for appropriate clean up, the state will issue a “Covenant not to Sue,” agreeing not to sue the owner or tenant if more contamination is found. The covenant is expected to reduce uncertainty in certain cases. It does not, however, protect against claims brought by third parties, nor does it relieve the party from liability for new releases.

Relief from Municipal Liability

Massachusetts recently passed legislation (Ch. 252) which exempts municipalities from liability when they take or purchase contaminated property for nonpayment of taxes. The contamination must have begun prior to acquisition, and the municipality must notify DEP, take steps to contain releases and prevent exposure, act diligently to sell or divest

itself of the property, and comply with other conditions. The new law should free up communities to take action to recycle blighted property.

Proposals on the Drawing Board

Several proposals are under discussion to provide financing to expedite Brownfield reuse. The first is H. 2274, a capital outlay bill which includes \$50 million in bond authorization for grants and loans to property owners, including municipalities owning foreclosed properties, in economic target areas for assessment and cleanup.

The second is a proposal -- not yet filed as legislation -- to create an Industrial Sites Recycling Fund to help finance the cleanup of sites in economic target areas. Criteria would include reuse potential as well as environmental issues. The fund could make loans and provide credit enhancements (e.g., loan guarantees, letters of credit, and insurance), but could not award grants. EOEA, DEP, and others are developing this plan.

Third is a proposed program of loans to landowners to purchase insurance designed to protect parcels for the lender as collateral for the loan. Two types of insurance are under discussion: "stop loss" insurance to insure a qualified cleanup estimate against additional costs; and "environmental remediation insurance" to guarantee later coverage if additional contamination is discovered or a new accident occurs. The insurance would complement a loan guarantee program.

As we will discuss later in this report, these proposals are the recommended point of intervention for the Inner Core and MAPC to affect future financing models.

The Federal Context

Superfund: The Law and Its Status

The federal Superfund law -- the Comprehensive Environmental Response, Compensation, and Liability Act, or "CERCLA" -- was originally enacted in 1980. It required a Superfund list ("CERCLIS") and set up procedures and standards for cleanup and liability. Although a bill has yet to be filed, the Superfund law is up for reauthorization this year.

Like the original Massachusetts 21E law, the federal Superfund law has achieved only limited results, with a number of complex and controversial issues presenting barriers. Most revolve around liability: who is or should be held responsible for what; the extent to which strict liability provisions promote or deter action; and the extent to which the cost burden is borne by the polluter versus the taxpayer. The federal law does not adequately recognize voluntary cleanup programs such as that in Massachusetts. Hence cleanups

accomplished legally under the state's program may still be clouded by the federal Superfund enforcement threat.

A consensus bill was developed in 1994 but never passed. In addition, several bills were filed last year to lend money to states to capitalize revolving loan funds dedicated to site cleanup in distressed areas. Such provisions are likely to be considered in the context of Superfund reauthorization.

Brownfields Action Agenda

In light of the shift in Congress and the emphasis on fast-tracking provisions of the Contract with America, the Environmental Protection Agency (EPA) announced a new Brownfields Action Agenda designed to implement those changes that can be accomplished administratively. It recognizes that environmental cleanup is a "building block to economic development, not a stumbling block." It removes a large number of sites from the Superfund list, thus clearing them from the cloud of potential liability, and announces funding for fifty Brownfields Economic Development Pilots during 1995 and 1996. The Agenda also lays out plans for a series of changes, including clarification of municipal acquisition liability, definitions of state and local roles during Superfund cleanups, and partnership building with stakeholders.

In general, the Brownfields Action Agenda shares with many states the new recognition of the environmental-economic development link and seeks to address similar barriers to progress.

Financing

Historically, funds have been available at both the state and the federal level for assessment and remediation of sites that pose an immediate threat to public health and/or drinking water supplies. This project investigates financing options specifically targeted toward urban Brownfields sites with redevelopment potential.

Matrix 1 on the following pages explores a fairly comprehensive menu of potential models for Brownfields financing. Examples are chosen from the Massachusetts context, and issues address applicability within the Commonwealth. It is important to note that no single option is likely to address the entire problem; an effective plan is likely to include a package of complementary measures.

Matrix 1

Potential Models for Brownfields Financing

These models and examples are generally chosen from other fields for possible adaptation to Brownfields site assessment and remediation. *Items in italics already exist and can be used for these or related purposes.*

| Type | Description | Examples/Variations | Status/Issues to Consider |
|---|---|---|--|
| PRIVATE SECTOR FUNDING SOURCES | | | |
| Insurance Programs | Environmental Liability Insurance | "Stop Loss" would insure against cost overruns; "Environmental Remediation Insurance" would protect against later discovery, later accidental contamination | Little is available now; 21E TF looking at possible new products using publicly backed loan guarantees to protect lenders against some risk & give them more confidence in project |
| Industry Self-Assessment | Cleanup fund created by industry-specific fees | "LUST"--Underground Storage Tank Petroleum Product Cleanup Fund, created by M.G.L. Ch.21J | Useful for specific industry. Is there a way to make it broad enough to apply to many different sites? |
| User Fees | Users of hazardous materials would pay a fee into a cleanup fund | Hazardous waste transporter fees | Mass. voters rejected a hazardous waste user fee referendum |
| Lender Consortium | Lenders pool resources, probably with state equity contribution to guarantee loans (see Public-Private Partnerships, below) | Mass. Housing Investment Corp. (MHIC) | MHIC was created in response to CRA pressure over bank redlining. Are banks greenlining? Can CRA be used to increase lending to brownfields? |
| Existing loan programs | Expand existing programs that fund housing or community & econ. dev. to cover brownfields investigation & cleanup | Federal Home Loan Bank Community Investment Fund; Mass. Housing Partnership Fund | Derived from community benefit considerations of S & L bailout & interstate banking; seems appropriate expansion |
| Secondary market | Loan repurchase | Fannie Mae | Pools risk; recycles funds |
| Utility-sponsored programs | Fund preliminary site investigations & planning activities where high reuse potential | Mass. Alliance for Economic Development (MAED), a utility-sponsored org. to link potential employers w/ available sites | Utilities & communities share interest in reuse |
| LOCAL GOVERNMENT TAX & INCENTIVE POLICIES | | | |
| Property tax abatements | Municipalities may forgive taxes during cleanup or negotiate lower rates | Ch. 121A | Cities with most Brownfields likely to have high costs, strained budgets, high revenue needs; benefits need to outweigh foregone revenues |

| Type | Description | Examples/Variations | Status/Issues to Consider |
|---|--|--|---|
| Tax increment financing (TIF) -- Classic model | Municipality creates special district, funds cleanup via borrowing against future revenue increases generated by reuse | Special district or municipality could issue debt, depending on state authorization | Requires legislation. IRS prohibits tax-exempt financing for cleanup of private property. Current EOCD bill sounds like betterments (see below), would authorize local govt. but not district to issue debt |
| <i>Tax increment financing (TIF) -- Massachusetts model</i> | Municipality & owner can negotiate to abate some of incremental tax or to apply it to the general fund or to a special purpose | | Benefits may be too far in future to add compelling incentive except as part of larger package. Each deal needs state approval |
| <i>Local foreclosure</i> | Municipality takes property for past taxes | Recent Mass. law (Ch. 252) exempts municipalities from liability from past contamination if they meet certain conditions | Can expedite site recycling; can assemble group of sites to attract companies |
| <i>Land banking</i> | Municipality sets up an entity to assemble, hold, and recycle foreclosed properties | Land Trusts | Municipality can reduce costs through economies of scale & can guide or control immediate & long-term reuse. Liability relief, however, hinges on quick turnaround |
| <i>Eminent domain</i> | Municipality takes ownership of the property | 121B | Pros: proactive; expedites action; can spur revitalization of nearby sites. Cons: costly; slow; entails potential liability |
| Betterments approach | Municipality funds cleanup via revenues or borrowing; owner repays with interest via future property tax payments | "Betterments Bill" recently authorized this for septic systems, underground fuel tanks, and lead paint | Municipality needs to appropriate funds; IRS and Anti-Aid ² issues. |
| Special districts | Special districts can be authorized to issue debt and be repaid via taxes assessed by the district. | | Possible IRS & Anti-Aid issues. Special districts, TIF, and betterments are all variations on the same theme; nomenclature is partly a matter of semantics |

² Article 62 of State Constitution prohibits pledging the credit of the Commonwealth for the benefit of a private party. There are a number of mechanisms to deal with this.

| Type | Description | STATE GOVERNMENT TAX & INCENTIVE POLICIES | Examples/Variation | Status/Issues to Consider |
|--|--|--|--------------------|---|
| State Tax Preferences for Cleanup | Tax preferences for cleanup costs of parties who meet certain criteria (e.g., reuse potential) | Tax credits | | Would require state legislation |
| State Reimbursement of Local Govt. Costs | State could reimburse local govt. for tax abatements & preferences | Via grants or adjustments to local aid formula | | Source and likelihood of state funding? |
| State Measures to Facilitate Local Debt Issuance | Options range from strengthening credit-worthiness of local govt. to assuming default risk or debt service cost. | State pays some of MBTA's debt service. | | Needs to be structured to avoid Anti-Aid issues; may affect state bond rating |
| PUBLIC-PRIVATE PARTNERSHIPS | | | | |
| State Measures to Facilitate Private Investment | State could make equity contribution to guarantee loans or could guarantee without upfront investment; insurers could assume some risk & projects could be limited | MHIC (see above); Environmental Capital Fund; needs support of Gov. & Economic Affairs, identification of agency, source(s) of funds | | State equity contribution would require legislation, as would fund. Proposed legislation uses Mass. Govt. Land Bank as vehicle (see below) |
| PUBLIC FINANCING | | | | |
| Direct Public Grants or Loans | State or federal government provides grants to localities for site & area-wide assessments & remediation; could function as loans based on reuse revenues | <i>Community Development Action Grants (CDAG); Community Dev. Block Grants (CDBG) & Sec. 108 loans; Public Works Economic Development (PWD) grants</i> | | Although these examples could be used for Brownfields-related projects, the idea is to initiate a separate grant or loan program specifically designed for Brownfields & not competing with other uses. |
| Direct State Grants to PRPs | State underwrites cleanup costs for which PRPs cannot get financing | Wastewater Construction Grant Program | | New appropriation required; potential IRS & Anti-Aid problems; CDBG & other fed & state funds could contribute if program structured right. |
| Direct State Loans to PRPs | A "bank" capitalized by state & federal equity & authorized to issue revenue bonds & to make loans to municipalities, authorities, & special districts | Wastewater State Revolving Fund Loan Program | | Requires state legislation; needs to be carefully structured to avoid IRS & anti-aid problems |

| Type | Description | Examples/Variations | Status/Issues to Consider |
|-------------------------------------|---|--|---|
| Conduit Financing Options | Industrial Development Finance Agencies (IDFAs) serve as nominal borrower, pass through for tax-exempt financing to private interests | MIFA and similar local agencies | Tax-exempt bonds are capped & can't be used for cleanup; could use taxable bonds; IDFAs typically finance creditworthy borrowers. Program could include credit enhancement tools, pool borrowers, etc., but this is outside MIFC's primary mission. |
| Government Land Bank Lending | Land Bank is authorized to make loans to public & private parties for acquisition & redevelopment; avoids IRS problems by channeling funds through public agencies (cities, CDCs, nonprofits); can lend to weak borrowers | Mass. Government Land Bank | Land Bank has been proposed to run Industrial Sites Recycling Fund; legislation not yet filed |
| Create Special Purpose Organization | State could create special organization to fund cleanup | Community Development Finance Corp. (CDFC) | Would require legislation |
| Enhance Credit of Quasi-Publics | State could spur lending by IDFAs, MIFA, Land Bank, or others by offering credit enhancements (e.g., loan guarantees) | | Possible IRS & Anti-Aid issues |
| REGIONAL APPROACHES | | | |
| Regional Clean Sites Authority | Create a regional authority with bonding capacity to cleanup and recycle brownfields; could pay for itself by selling some properties and redeveloping others | H. 1055 (1994) proposed a Central Massachusetts Economic Development Authority (CMEDA) for this purpose ³ | Would require legislation; would need to be structured to address IRS issues |

³ Under the proposed legislation, communities would contribute and share in the benefits. The Authority would purchase sites. Sites would not be taxed by the community.

Matrix 2 presents financing initiatives in place or under consideration elsewhere. Except as noted, the matrix describes financing where economic reuse potential is a priority. It does not include the more traditional funding programs designed solely for environmental and public health reasons, except where the program demonstrates a unique approach.

Matrix 2

Brownfields Financing Initiatives -- National Examples

| Locality | Program | Description | Funding Source & Status | Contact |
|---|--|--|---|--|
| Connecticut | Urban Sites Remedial Action Program (USRAP)/Revolving Fund | Funds studies and remediation of sites with reuse potential in distressed areas | \$25 m in bonds since 1992. 6 state funded projects underway; \$10 m committed @6/94. Added staff has expedited added private cleanups. | Edward Parker, Connecticut DEP |
| Kentucky | Hazardous Waste Assessment Fund | Only for environmental emergency situations with no viable PRP ⁴ | A per ton fee to hazardous waste generators. Established in 1992. Generates about \$2.2 m/yr. Cap of \$5 m = incentive to spend quickly. | Jeffrey Pratt, Kentucky Div. of Waste Mgmt. |
| Michigan <i>Dept. of Natural Resources</i> | Site Assessment Fund | Grants to local govt. for environmental investigation of sites with redevelopment potential; approach broadened to fund area-wide redevelopment strategies | Supported by "Quality of Life" bond. In 1994, \$10 m was available for assessment. "Seed money" has leveraged other \$ (e.g., PRPs, local bonds). | Amy Carter Dept. of Natural Resources |
| | Site Reclamation Fund | Grants to local govt. to investigate and clean up; funding based on local priorities and econ. dev. potential | \$35 m supported by same bond as above; \$9.4 m has been awarded, with \$25 m remaining | See above |
| | Super Priority Liens | If cleanup increases value, lien captures increase | Authorized by Act 307 | See above |
| Minnesota <i>Dept. of Trade & Econ. Dev.</i> | Contamination Cleanup Grant Program (CCGP) | Grants to cities and quasi-public authorities for cleanup and related costs for polluted sites with imminent development potential | \$2 million appropriated by legislature; \$1.5 million from bond. New initiative with many restrictions; no applications yet ⁵ | Prog. info: Minn. Dept. of Trade & Econ. Dev., (612) 297-4132. |
| | Hazardous Substances District | Special Tax Increment Financing (TIF) Subdistrict | Available tool to capture increased value to recoup cleanup costs | See above |
| Minneapolis <i>Metro Council</i> | Contaminated Site Loan Program | Council could make loans, levy up to \$10 m in taxes, & use \$14 m approp. & \$1 m from bonds | Proposed legislation | (612) 291-6359 |

⁴ Although not based on reuse criteria, this program is included here because the funding source is of interest.

⁵ Provisions include eligibility requirements, review criteria, deadlines, technical review, local match requirements, and a method to recover costs from responsible parties. City must already have a detailed cleanup plan, and hence have already spent considerable sums, even before match requirement. According to the City of Minneapolis' *Contaminated Sites Strategic Plan*, the program has "certain procedural and financial obstacles to its full utilization by cities."

| | | | | |
|---|--|---|--|---|
| New Jersey <i>Econ. Dev. Authority & DEP</i> | Hazardous Discharge Site Remediation Fund | Grants to municipalities for preliminary assessments & site investigations; low-interest loans to cities for further remedial investigation & to anyone for cleanup | From bonds of \$45 m (Hazardous Discharge Bond) & \$10 m (Economic Recovery Fund). Info helps cities market sites for reuse ⁶ | Sheryl Telford (609 292-1250) |
| Ohio | Loan programs | Low interest loans and loan guarantees to private and govt. agencies for investigation & cleanup | Extended use of existing funds: water pollution control fund, Water Dev. Auth., & Econ. Dev. Auth. New law passed (Real Estate Reuse & Cleanup); regs in process | Ashvin Chandrasekar, Cuyahoga County Pl. Comm., (216) 443-3747; Rod Beals, Ohio EPA |
| | Tax Abatement Program | Parties to "covenants not to sue" get automatic 10-yr. exemption from property taxes on increase in assessed value resulting from cleanup & can request additional abatements for reuse improvements | New law; no experience yet | See above |
| Oregon | Loans and grants (under consideration) | Loans to cities for site assessments to make property marketable; grants or loans to cities for next steps (stabilizing &/or cleanup). Revenues from Parcel A reuse could go to remediate Parcel B; city could repay loan from reuse revenues | N/A. Program under consideration | Michael Rosenberg, Dept. of Env. Quality |
| Pennsylvania <i>Dept. of Commerce</i> | Site Assessment Pilot Program (SAPP) | Grants to public, quasi public, & publicly sponsored private companies for assessment of abandoned brownfields where there is no responsible party | Three grants awarded to date | Jamie Henley (717) 787-7120 |
| | Industrial Communities Site Program (ICSP) | Grants to public & quasi publics & non-profits for cleanup; criteria include financial gap & feasibility, potential public benefits, tax revenue, & job creation | Funded through state tax revenues; 10 ICSP grants funded to date | See above |
| | Industrial Communities Action Program (ICAP) | Low interest loans to govt. & non-profits with private investors & developers to stimulate reuse. Must leverage private equity investment & non-state money & be fully collateralized. | Funded through state tax revenues; 1 loan this year; 15 loans over past 4 yrs. | See above |

⁶ Loan program funds those who can't otherwise get bank loans. Program is run by state Economic Development Authority (EDA); has been flexible with applicants; loans are contingent on people selling the property & proceeds coming back to the fund. EDA has been aggressive in bankruptcies, getting loan repayments as part of settlements.

The options for planning a financing program need to be considered in terms of target groups, purposes, form of assistance, goals, type of site, and extent of the problem. These may vary widely from one situation to the next. The range in each category is shown below.

| VARIABLES TO CONSIDER | |
|-----------------------|---|
| Target groups | Neighborhood Single community Group of communities Private party State/other public Non-profit & institutional |
| Purposes | Preliminary assessment Detailed assessment Remediation planning Remediation Redevelopment |
| Form | Grants Loans Credit enhancements |
| Goals | Parity with Greenfields Neighborhood revitalization Productive reuse Job creation Tax revenues |
| Type | Single site, single owner Multiple sites, multiple owners |
| Extent | Limited contamination Serious contamination Unknown contamination |

With regard to target groups, it is clear that privately owned sites with strong reuse potential where property values exceed cleanup costs are least likely to require additional financing assistance. There is much greater incentive to redevelop suburban Brownfields because of peer pressure, water protection issues, and resale potential. Urban Brownfields, on the other hand, are more likely to face the threat of abandonment. Abandoned, "orphan" sites will need substantial assistance, financial and otherwise.

There are indications, however, that some private owners avoid cleanup responsibility by declaring bankruptcy. If polluters are not held responsible, the taxpayer ultimately pays. Financing programs need to walk a tightrope when dealing with private property, targeting only those sites with a financing gap and not subsidizing polluters.

In terms of program purposes, many communities nationwide have found that the chief initial barrier to recycling Brownfields is not the actual cost of cleanup -- although this may pose a major problem -- but the money to do the preliminary assessment needed to make a property marketable in the first place. Developers and lenders are more likely to take risks if the basic environmental information is available. The two biggest issues for local government are money for assessments and the availability of technical assistance.

Boston is a good example. The City is targeting substantial resources of all types to the revitalization of the Dudley Street neighborhood, a distressed area which is the historic town center of the Roxbury neighborhood and the principal business center for Boston's African-American community. The area includes 9% of Boston's 395 confirmed and suspected 21E sites and 1300 vacant lots,⁷ many with a previous if undocumented history of lead-painted housing. Many are orphan sites.

The City is applying for an EPA Brownfields grant first to get basic information on the sites and map them; second to involve the community in remediation and reuse planning; and third to develop a plan to attract sustainable industrial and commercial uses to create jobs and training opportunities for local residents in an area with 30% unemployment. This proposal clearly identifies the need for basic information as the first step in its Brownfields recycling strategy.

The Boston Brownfields EPA grant application, along with other information from studies nationwide, indicates that grants, rather than loans or credit enhancements, are often necessary to get the job done. This is clearly the case where private owners are not in evidence or where the cost of assessment and cleanup significantly affect the marketability of the site. A developer who is already taking a chance is unlikely to incur further debt to cover cleanup when other sites do not have such cost requirements.

The case study of 65 Bay St. in Dorchester (see Appendix) reinforces this conclusion: equity -- not more debt -- is needed. The study also shows that Brownfields often involve high preparation costs aside from cleanup. Costs to demolish buildings and remove non-hazardous debris may be high enough to be the deal-breaker, adding substantially to the inequities between Brownfields and Greenfields. As 65 Bay St. indicates, cleanup costs, along with other associated costs, may be so high that no combination of enhancements enables a remediated urban Brownfield in a distressed area to compete favorably with a suburban Greenfield. The rents needed to cover total Brownfield site preparation costs are much higher than the urban market can bear.

In addition to lower site preparation costs, the Greenfield site will generally have many other advantages, such as those shown on the following comparison chart.

⁷ See Boston Brownfields Partnership Task Force, Boston Brownfields (EPA grant application), March 1995; data quoted as of April 1993. More recent list dated August 1993 identifies 518 sites.

BROWNFIELDS VS. GREENFIELDS

Balance Sheet

| BROWNFIELDS | GREENFIELDS |
|---------------------------------------|---|
| <i>Disadvantages</i> | <i>Disadvantages</i> |
| Higher costs of investigation | Distance from central city, harbor, airport |
| Cost of cleanup | |
| Cost of demolition | |
| Cost of other (non-hazardous) cleanup | |
| Added time to plan & cleanup | |
| Congested local streets | |
| | |
| <i>Advantages</i> | <i>Advantages</i> |
| Presence of existing infrastructure | Lower cost |
| Proximity to large workforce | More large available sites |
| Proximity to Boston, harbor, airport | Highway access |
| | Potentially fewer local permit issues |
| | Less onerous state reviews |
| | Near upscale housing, amenities |

Hence, the goal of a Brownfield financing program should not be parity with Greenfields -- an impossible target -- but some combination of neighborhood revitalization, economic reuse, tax revenues, and job creation.

Prospects for success improve where there is a clear economic development mission from the outset. Programs need to articulate economic development goals, identify the marketable advantages of the site or area, and pinpoint the characteristics of the "market niche" to which the site may appeal. This means strategically identifying and targeting appropriate industries for Brownfields and developing a plan to attract them.

The Somerville snapshot (see next page) is a good case in point. The City's Boynton Yards project began with an economic revitalization plan. The City recognized that the site could not compete on equal terms with suburban Greenfields, so it is marketing to those firms such as food processing, paper and plastics, and commercial printing, which require proximity to the Inner Core. The resulting jobs are likely to benefit the nearby low-to-moderate income neighborhood, while the availability of a substantial workforce within walking distance can be used as a strong selling point for the site. The idea is to promote the site's special features to types of companies that need these features.

The Everett snapshot also illustrates the importance of public-private cooperation in the reuse planning process. The Cambridge example shows how the City handled an unexpected discovery of contaminants, while the Arlington story shows how the possibility of site problems may indirectly work to the advantage of the Town.

BROWNFIELDS SUCCESS STORY: SOMERVILLE

| | |
|-------------------|---|
| Site Name: | Boynton Yards Revitalization Area (Phase I) |
| Site Size: | Approximately eight (8) acres |
| Former Use: | Industrial |
| Zoning: | Industrial Park (IP) |
| Key Contaminants: | Petroleum and lead |
| Ownership: | Public (Somerville Redevelopment Authority) |
| Costs: | About \$500,000 to date |

Over about six years, the Somerville Redevelopment Authority (SRA) has assembled eight acres of industrial land for redevelopment through negotiated sales and eminent domain takings. The project area, which is the oldest industrial area in the city, was particularly blighted and had become a location plagued with extensive illegal dumping. The project area is surrounded by several residential areas, where residents tend to be of low/moderate income. In addition to eliminating the blighting conditions through redevelopment, the project's main goal has been creation of jobs for these low/moderate income persons.

Resources used for the project include CDBG entitlement, CDBG Sec. 108 Loan, CDAG, PWED and EDA. The project area includes three different sites recognized by DEP as contaminated in some way. Two of these sites, which fell under the old MCP waiver system before 21E revisions, have been fully remediated. The third site was recently classified as "Tier II" under the new MCP and is pending remediation. Somerville has funded all necessary environmental engineering activities. Two of the sales involved escrow accounts to address environmental issues. Similarly, one of the takings involved a reduction in value due to contamination. The prior owner of this parcel has brought suit against the SRA over valuation in the eminent domain taking; the SRA has filed a countersuit under 21E and the case is currently in litigation. The city is currently actively marketing the other sites, targeting those industries that need to be near Boston.

To date, remediation has cost about \$500,000 for the 8 industrial parcels. Each needed an initial site assessment, and most required much more work, primarily removal/disposal of hazardous materials and chemicals in and around three buildings prior to demolition and removal of 12 underground storage tanks (UST) (capacity from 275 to 5,500 gallons; one contained diesel fuel; others No. 2 or No. 6 oil). Somerville estimates these typical costs: Initial site assessment: \$6,000-8,000; UST removal/disposal = \$10,000, including removal/disposal of contaminated soil at an asphalt batching facility at \$50/ton and disposal of UST contents at a waste oil facility at \$2/gallon.

BROWNFIELDS SUCCESS STORY: EVERETT

| | |
|-------------------|---|
| Site Name: | Monsanto/Rosen Associates |
| Site Size: | 99 acres |
| Former Use: | Chemical Company |
| Zoning: | Industrial |
| Key Contaminants: | Inorganic compounds, volatile organic compounds, acid organic compounds, polycyclic aromatic hydrocarbons, plasticizers, polycarbonated biphenyls |
| Ownership: | Private |
| Costs: | Confidential |

This site is currently undergoing environmental remediation. The owners of the site have received a waiver from DEP to conduct the remediation privately. The parcel is in the process of changing ownership from the Monsanto Chemical Company to Rosen Associates, a shopping center developer. The intention of the new owner is to develop a major regional shopping center and also to retain land along the Malden River in a natural state. This property is adjacent to a fifteen acre conservation site known as the Monsanto Fund Land. This too will remain untouched.

The resources used to clean this site are private; however, the City of Everett and the private owners have worked closely to assure that the reuse plans are favorable to the city. Thus, a public audience has been given to a private action. This openness will result in a new use in a formerly heavily industrialized section of town, a recycling that truly meets the needs of residents today. The nature of this site's former use could have been a major barrier, yet the Monsanto Company sets an example for other owners of environmentally damaged land. Proper planning by this firm and their willingness to work with the city means that the site is now opened up to the public.

Boynton Yards, Somerville

The Boynton Yards, historically, is one of Somerville's oldest industrial areas. In recent years, however, the area became plagued by illegal dumping.

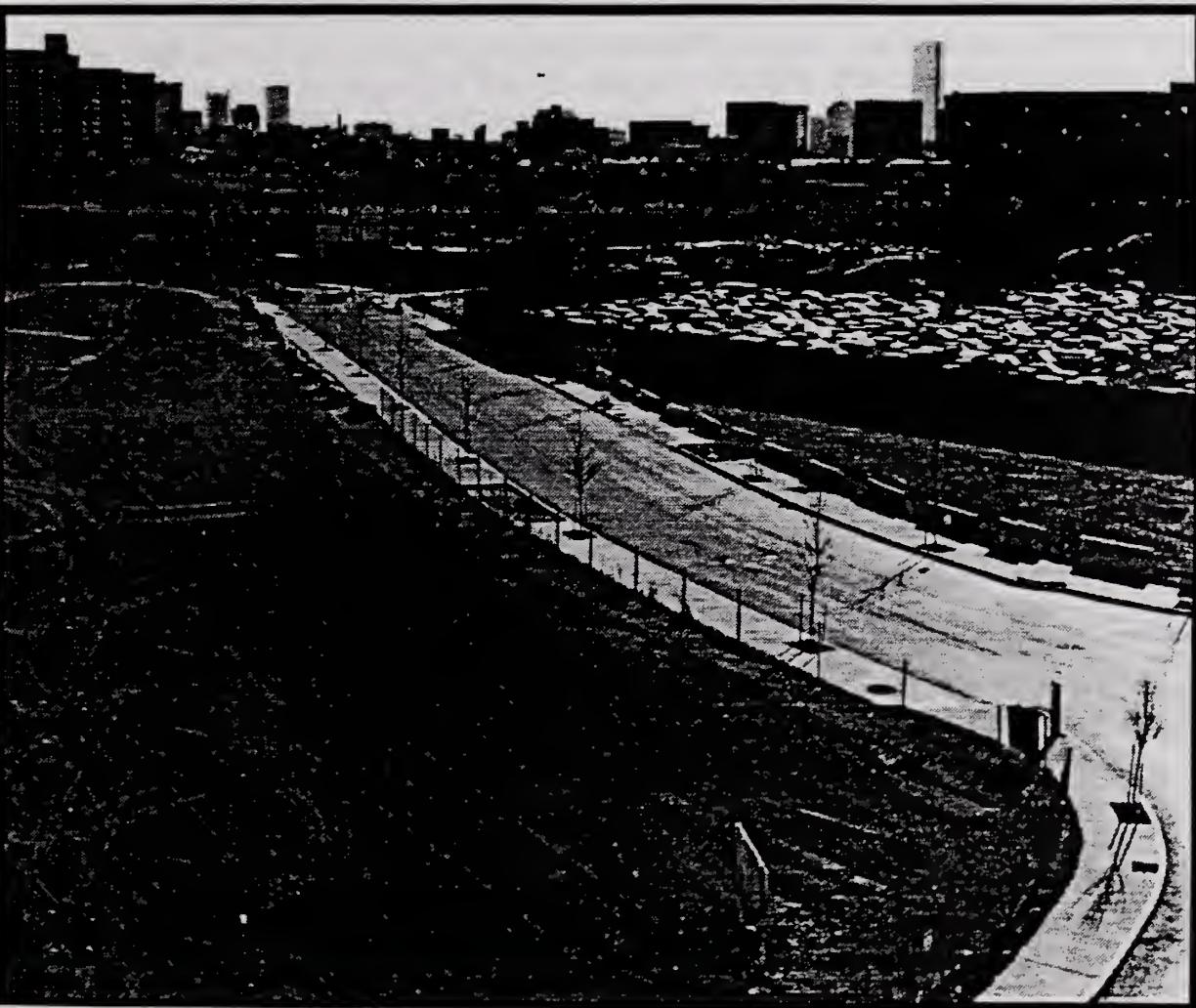


During the environmental remediation of the Boynton Yards, numerous underground storage tanks (UST) had to be removed and the surrounding contaminated soil was disposed of at an asphalt batching facility.





Tires, construction debris, and "white goods" typified the illegal dumping present at the Boynton Yards.



The Boynton Yards today after completion of building demolitions, environmental clean up, and roadway construction.

BROWNFIELDS SUCCESS STORY: CAMBRIDGE

| | |
|-------------------|---|
| Site Name: | Lechmere Canal Park |
| Site Size: | 7 acres |
| Former Use: | Canal, surrounded by industrial & parking lots |
| Zoning: | Formerly Industrial; now Planned Unit Development (PUD) |
| Key Contaminants: | #2 Fuel Oil |
| Ownership: | Public |
| Costs: | \$43,854 (consultant: \$9,231; soil removal: \$34,623) |

In the 1980s, the City of Cambridge produced an ambitious Urban Design Plan to revitalize East Cambridge. The Cambridgeside Galleria and new condo developments are among the most visible elements. To attract people and create a focal point for new development, the City decided to create Lechmere Canal Park, reshaping the existing canal and designing a park around it.

In 1989, in the course of construction, the contractor uncovered a 2000 gallon tank that was punctured and leaking #2 fuel oil into the ground. The City told the contractor to stop work and notified the Department of Environmental Quality Engineering (DEQE), the precursor to DEP. DEQE investigated and notified the City of steps to take. The City hired a contractor to remove the contaminated soil (26 tons) and the tank, which contained 75 gallons of oily sludge and water.

In the course of removal, the City found that contamination had spread to additional soil, which it then had stockpiled on the site for further analysis. The City hired a second consultant, who recommended that the soil be disposed of by in-state asphalt batching because this method relieves the City of long-term liability associated with landfilling contaminated soil. The City followed the recommendation, had an additional 30 tons of soil removed, and went on to complete Lechmere Canal Park.

BROWNFIELDS SUCCESS STORY: ARLINGTON

| | |
|-------------------|---|
| Site Name: | Reed's Brook |
| Site Size: | 20.2 acres |
| Former Use: | Vacant |
| Zoning: | Residential |
| Key Contaminants: | Household trash (assumed non-hazardous) |
| Ownership: | Public |

The parcels in this site -- Arlington's largest undeveloped site -- were once owned by 14 different parties. The Town negotiated with the owners to use it as a sanitary landfill, which it did from 1959 to 1969, when the landfill was closed. After some ownership changes, the FDIC acquired the entire property. The Town later bought the note for \$10,000, foreclosed, and took title in 1995.

Although the landfill received only household trash and is not believed to contain hazardous materials, the Town's decision to buy was based on the possibility of contamination. By retaining ownership, the Town eliminates the possibility of being sued by future owners.

Decisions about the site's future are largely shaped by the existence of the buried waste. The Town is engaged in decisions about the future use and is most likely to use it as public open space for both active and passive recreation. An alternative such as housing would require the Town to clean the site to a much higher standard: the cost of the land (which would be low), plus remediation would be \$65,000 per dwelling unit, much higher than the going rate of about \$20,000 per unit and economical only at double or triple the allowable density, which already permits townhouses and garden apartments.

The Town is likely to expend \$1-2 million to remediate and upgrade the property. By declaring it to be a blighted property qualifying for urban renewal under Ch. 121B, the Town will be able to use CDBG monies, among other sources.

Arlington's revenues from new growth are among the lowest in the state, so passing up a revenue source is not an easy decision. On the other hand, Arlington is a very built-up community with limited opportunity for open space and recreational uses. Thus the reuse limitations which make the Town's largest undeveloped parcel available for these public purposes are in some ways a blessing in disguise.

Findings

Brownfields redevelopment is an issue of regional significance, affecting both the vitality of older, industrial areas and the spread of suburban sprawl. Successful Brownfields strategies need to address process, planning, information, and liability, as well as financing options. Outlined below is a series of general recommendations, followed by more specific recommendations dealing with financing. These recommendations do not address technical issues under the purview of DEP; rather, they are recommended actions appropriate to the Inner Core and/or MAPC, working cooperatively.

General Recommendations

1. Process
 - A. Bring together Inner Core stakeholders to share ideas, identify barriers, cooperate on solutions, and influence public policy and programs
 - B. Host a workshop to facilitate education and coalition building
 - C. Form an ongoing Regional Brownfields Reuse Working Group to pursue recommendations below
2. Planning
 - A. Create an Inner Core Strategic Brownfields Reuse Plan
 - (i) Select priority areas
 - (ii) Develop a Marketing Plan, identifying appropriate uses and companies
 - (iii) Pool sites
3. Information
 - A. Create an integrated, computerized database to combine all site-specific information on environmental status with relevant economic development information; institute procedures to maintain database. Potential sources of funds: Municipal Incentive Grants (MIGs); private foundations.
 - B. Alternatively, investigate existing data availability, limitations, and options; recommend plans for an integrated database; seek implementation by appropriate parties.
4. Liability
 - A. Adapt "Covenant not to Sue" to local level.
 - B. Support changes to federal Superfund law to ensure that parties absolved under the state covenant do not face the threat of federal liability.

Financing Recommendations

1. Work with DEP, EOE/A/MOBD, and relevant stakeholders to refine the proposed Industrial Sites Recycling Fund and reconcile it with the capital outlay bill (H.2274). The resulting bill should include some or all of the provisions below.

MODEL FINANCING LEGISLATION

should include some or all of the following provisions:

- ★ Economic development strategy in place
- ★ Site(s) linked to reuse plan
- ★ Criteria include economic development, job creation, revitalization potential
- ★ Multi-property and area-wide assessments encouraged
- ★ Pooling of sites encouraged for economies of scale throughout process
- ★ Grants as well as loans
- ★ Preliminary assessment an eligible activity
- ★ Very fine-tuned targets -- gap financing only
- ★ Inducements to maximize private initiative
- ★ Safeguards to ensure private responsibility
- ★ Full menu of options and maximum flexibility on a pilot basis
- ★ Simplicity
- ★ Proposed reuse does not endanger residents, is sensitive to environmental justice issues
- ★ Community benefits from reuse revenues via some form of “profit sharing”
- ★ Financing leverages other public and/or private investment
- ★ Rank & priority system

2. Seek to expand existing programs to cover Brownfields investigation and remediation as eligible projects. Link especially to programs for economic development, infrastructure, water pollution control.
3. Set up a multi-community pool of Brownfields sites as a pilot for joint action (e.g., joint purchasing of technical services, joint approaches to lenders to create loan pools, risk-sharing insurance pool). Purposes: to get site information to dispel developer and lender fears and to market a package of sites for reuse; to cut costs; and to increase influence.
4. Seek funding for a Brownfields initiative to create the multi-community pool of Brownfields sites, design an integrated database, and/or develop an interlocal Strategic Brownfields Reuse Plan.

SOURCES

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Greenfields Group, The Greenfields Report, Vol. 1, Issues 1 & 2 (November and December 1994); Vol. 2, Issues 1 & 2 (February and March 1995).
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Tom Spofford, Draft List of Potentially Applicable/Useful Financing Tools (Memo to 21E Finance Committee, March 1993).
Twin Cities Metropolitan Council (Joanne Barron)
Stateside Associates (Mark Anderson)
U.S. EPA, Region I (Richard Cavagnero); Washington (Marjorie Burkholz).

APPENDICES

1. Contacts and Resources
2. Case Study
3. Hazardous Waste Site Information excerpted from MetroPlan 2000
4. DEP Materials
Mass. Contingency Plan / Waste Site Cleanup Program
Clean Sites Initiative -- Covenant not to Sue
MOBD Locations
DEP Locations

USEFUL CONTACTS AND RESOURCES

Government Agencies

Massachusetts Department of Environmental Protection⁸
One Winter Street
Boston, MA 02108
(617) 292-5500

Massachusetts Contingency Plan (MCP) Hotline:
(617) 338-2255
(800) 462-0444

Hazardous Waste Site Professional Board of Registration
(617) 292-5556

Massachusetts Office of Business Development⁹
One Ashburton Place, 21st floor
Boston, MA 02108
(617) 727-3206

U.S. Environmental Protection Agency
Superfund Hotline: (800) 424-9346
Region 1 Office: (617) 573-5729

Citizen Organizations

Environmental Diversity Forum
67 Batterymarch Street, 4th floor
Boston, MA 02110
(617) 737-3214

Citizens' Clearinghouse for Hazardous Waste
P.O. Box 6806
Falls Church, VA 22040
(703) 237-CCHW

Massachusetts Campaign to Clean Up Hazardous Waste
37 Temple Place
Boston, MA 02111-1305
(617) 282-4821

⁸ Regional offices are listed in the last section of this Appendix.

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**CASE SUMMARY
65 Bay St. - Boston (Dorchester)**

JANUARY 4, 1995

Steven Landau, prepared for the Inner Core Subregion

Edmund P. Tarallo, President

William G. Constable, Vice-President

Donna M. Jacobs, Secretary

Richard A. Easler, Treasurer

65 Bay St. - Boston (Dorchester)

Description and History

Sixty-five Bay St. is located on the southern side of Bay St. in the Savin Hill neighborhood of Dorchester, and consists of three parcels with a total land area of approximately 4.7 acres. The property lies immediately adjacent to the Savin Hill MBTA station, making 65 Bay St. an ideal employment location from the perspective of MetroPlan 2000. The site includes a vacant and unusable 77,000 square foot brick and concrete building. The building was constructed in 1909, in part two and three stories high, and is not configured for modern industrial use. The current owners are planning for its demolition as part of site preparation work.

In addition to the old factory building, the property includes a man-made lagoon that stored the process and cooling water needed in the manufacture of insulated wire prior. The land surrounding the lagoon has a thick vegetative growth.

Sixty-five Bay St. is a microcosm of Dorchester's economic history. While the non-profit Dorchester Bay Economic Development Corporation (DBEDC, a non-profit community development corporation) now owns the site, the property was home to the Boston Insulated Wire Company from 1909 until 1987. In March of that year, in the midst of the recent real estate boom, Boston Insulated sold the site to the Bay St. Development Corporation which proposed a large scale residential development on the site. In the early 1990s, as the region's real estate market collapsed, Bay St. Development declared bankruptcy, and the Federal Deposit Insurance Corporation was left in control of site, having secured a \$9 million bank note.¹

Today, the property could be classified as "abandoned." The building is vacant and dilapidated. Site visits this summer revealed three "torched" automobiles and a 275 gallon above ground storage tank abandoned on the site, as well as household trash and rubbish on land overgrown with weeds.

The Dorchester Bay Economic Development Corporation has been trying to recycle 65 Bay St. for industrial use over the past three years. DBEDC acquired an option to purchase 65 Bay St. for \$1.00 in February 1993. In December 1994, DBEDC - with assistance from the city of Boston - successfully negotiated title to the site with the FDIC, principals of the Bay St. development corporation and lien holders on the property.

¹ The note was also secured by the principals of Bay St. Development. In addition, the Corporation was in arrears for \$250,000 in real estate taxes and water and sewer charges.

Recent Environmental History

Environmental assessments of the property have been conducted since 1986, as Boston Insulated prepared to sell the company, and the new owners prepared to purchase the site and implement the residential development plans. In February of that year, an assessment conducted by HMM Associates, Inc. revealed low levels of volatile organic compounds (VOCs), heavy metals, and oil and grease in groundwater samples. Several months later, analysis of surface water and sediment in the lagoon revealed low levels of VOCs and silver in the water, but elevated lead, oil and gas in the sediment samples. In July 1987 additional surface water and sediment sampling found low concentrations of zinc and copper in the water and high levels of oil and gas in the sediment. Yet further analysis of the sediment revealed PCBs, PAH,² and “heavy wax like compounds.”

Initial remediation efforts began in November 1988 by Clean Harbors, Inc. The lagoon was drained, and the sediment was excavated and stockpiled next to it, but never removed from the property.³ Over the subsequent years, the sediment has become indistinguishable from the soils surrounding the lagoon.

In 1990 and 1991, Rizzo Associates, Inc. conducted site testing, and reported low to non detectable concentrations of lead and VOCs in the groundwater. An analysis of subsurface soils showed elevated levels of total petroleum hydrocarbons (TPH) and moderate concentrations of metals and detectable PCBs in the subsurface soils near the lagoon. Sediment samples revealed elevated concentrations of TPH.

Summary of Environmental Contamination

DBEDC hired CDW Consultants Inc. in 1994 to investigate the presence of oil or hazardous materials on the site. The CDW Principal-in-Charge of this project is a Licensed Site Professional (LSP) in Massachusetts under the provisions of the Massachusetts Contingency Plan (MCP)⁴ Chapter 21E, and is authorized by the Department of Environmental Protection to supervise site investigation and clean-ups of all but the most hazardous situations. The property is a Tier II Disposal site, meaning that planning and conducting remediation activities may be done by a LSP.⁵

The CDW analysis reports that lead and total petroleum hydrocarbon exceed standards for the MCP Method Level 1 Risk Assessment in subsurface soil and lagoon sediments.⁶

² polynuclear aromatic hydrocarbons

³ The sediment was mixed with calcium sulfate and covered with plastic.

⁴ The MCP (310 C.M.R. 40.0000) are regulations promulgated under M.G.L. Chapter 21E

⁵ Tier 1 and Tier 1A sites are the seriously contaminated lands which require close oversight from DEP.

⁶ Method 1 is a designation under the 1993 revision of the MCP which, in colloquial terms, defines “how clean is clean enough” to provide “no significant risk” given the foreseeable uses of the site. Method I uses numeric standards for more than 100 chemicals that may be found in soils and groundwater.

The firm recommends that the soil and sediment be “re-excavated, stockpiled and characterized,” and estimates that 150 - 250 cubic yards (weighing 260 - 440 tons) would be dug up. Prior to excavation of lagoon sediments, the status of the lagoon as a “wetland” needs to be determined, and permits from DEP and the U.S. Army Corps of Engineers may be required.⁷

Next Steps for Clean-up

A “No significant Risk” finding needs to be assigned to 65 Bay St. if that property is to be economically recycled. To do this the following steps are required:

- Submit a Site Status Report to DEP prior to initiating any remedial activities;
- Determine status of wetlands, and secure any necessary permits;
- Develop a Risk Abatement Measure Plan for DEP on the disposal of soils containing TPH;
- Initiate and complete the clean-up; and
- Submit to DEP a Remedial Action Outcome statement signed by a LSP, including a summary of remedial actions implemented, laboratory and field testing, and an assessment of risk to humans and the environment.

Estimated Cost of Clean-up

CDW estimated a cost of clean-up of approximately \$40,000 or \$225,000. If the excavated material is moved off-site to be recycled into asphalt batching and/or land-fill, the cost estimate is \$225,000. However, CDW issued an opinion that the materials can be recycled on-site and re-used at 65 Bay St. as asphalt surfacing materials at the far less expensive cost estimate.

As an additional note on how inexact estimates may be, CDW expressly cautions that “where access to the report was unavailable or limited, CDW renders no opinion as to the presence of hazardous materials or ...indirect evidence related to hazardous material...”

⁷ Most likely, the lagoon will be considered as a small surface water body, not a wetland, and therefore will not require the involvement of the Corps of Engineers.

Other Unique Costs to Develop Site

Site preparation other than costs associated with specialized hazardous waste clean-up will be more expensive than a clean suburban site by somewhere in the order of \$500,000. All costs are estimates from the DBEDC draft market study. Site specific costs are expected to be approximately \$295,000, including demolishing the dilapidated 77,000 square foot building, cleaning the site of torched automobiles, construction debris and other garbage, and draining the lagoon, as a cost separated from the clean-up of hazardous waste.

Other site preparation required includes lighting and parking, road improvements to Dewar St. and internal roadways at a estimated total cost of \$260,000. While portions of these latter costs may be common to any “new” development site, repairs to a city roadway and some of the parking and lighting costs may be more costly in a recycled inner-city neighborhood location.

Development Objectives

The objective of DBEDC is to develop the site for light assembly or industrial services. Consistent with DBEDC’s status as a community development corporation, these targeted uses would provide “good jobs” for the low and moderate income residents of the Savin Hill to Uphams Corner (location of DBEDC offices) neighborhoods. The public policy orientation of DBEDC will exclude operators from the site that would cause unpleasant or unhealthy impacts to the community, such as heavy trucking on densely crowded roadways or noxious odors emitting from the property.

The envisioned development scenario is to demolish the existing building on 65 Bay St. and construct one, two or three buildings with a total footprint of 75,000 to 100,000 (or more) square feet. DBEDC is looking to find a single user to develop all three parcels as being preferable to selling or leasing the parcels separately.

DBEDC has been approached by parties interested in purchasing the land as a standard real estate acquisition. DBEDC, however, seeks to control the development on the site as part of its community mission, and therefore does not want to sell the property (or single parcels on the property).

In the long-term, 65 Bay St. might be Phase I in the redevelopment of 40 acres of land in Dorchester (inclusive of 65 Bay St.) that stretch along the Southeast Expressway, bordered by Freeport Avenue, Dorchester Avenue and Bay St. Sixty-five Bay St. is the northern tip of this larger area.

In June 1993, DBEDC prepared a preliminary development proposal for the full industrial area. However in 1994, plans were scaled back to concentrate first on acquisition and redevelopment of 65 Bay St., described by a development consultant as the “linchpin, essential to any further development in the area.”

Development Potential & Market Overview

Impediments facing 65 Bay St. are common to many inner-city locations. First, the property is 1 and 1.25 miles from the closest two interchanges with Route 3/I-93, and is about three miles away from the Back Bay or the downtown Boston financial district. The distance from the highway places the property at a retail disadvantage from sites such as the new South Bay Shopping Center that opened directly off of Route 3/I-93. A recent development strategy study commissioned by DBEDC (still in draft form) concludes that 65 Bay St. is not an attractive location for wholesaling centers or firms with business needs at the airport or seaport due to its location away from highway interchanges. The draft study also suggests that the location of the site is a barrier to capture potential spillover from the financial district, medical centers or universities. In addition to its distance from a highway interchange, the draft study suggests that disincentives include the fact that high quality office, R&D or industrial space is not now located near the site, and that nearby commercial uses are neighborhood oriented and do not service major business markets in greater Boston.

The marketing problems are confirmed from reviewing Prospect Inquiry Bulletins of the Massachusetts Alliance for Economic Development from January 11, 1994 through December 14, 1994. In that span 54 potential industrial users contacted MAED regarding its site finding service. Of the 54, six at most would have been appropriate for referral to 65 Bay St. if that site had been clean and ready for development (or redeveloped into an available modern facility). Most inquiries were interested in suburban locations, and others that would consider Boston if interstate access were available.

Though the DBEDC market study's finding is that 65 Bay St. - even if clean - is not situated for higher end industrial or commercial use, it identifies positive characteristics:

- Location adjacent to the Savin Hill Station of the Red Line, providing an easy location to a workforce between Braintree/Mattapan and Alewife in Cambridge.
- The site is linked to downtown Boston by the Red Line and is closer to other urban core industries than far off suburban sites.
- A nearly five acre parcel in Boston is a significant development asset.

The location of the site may make it viable for "back office" space or "back lab" space, where proximity to the more prestigious central address is important as would be the much lower rents than commanded in the prime locations such as the financial district, Longwood Medical Area or Kendall Square.

At this time, demand for local industrial space appears weak. The city of Boston lost over 20,000 manufacturing jobs between 1980 and 1992. Boston's EDIC reports that the city's industrial and R&D vacancy rate is 32%.⁸ Boston's sprawling Dorchester neighborhood contains some 800,000 square feet of industrial space (with 550,000

⁸ Of 16.6 million square feet, 5.3 million are vacant.

classified as "quality industrial space") and suffers from a 64% vacancy rate as of mid-1993.

The DBEDC draft study suggests that the combination of positive and negative characteristics of the 65 Bay St. property may make the site attractive to local light assembly or industrial service firms seeking cost effective facilities for expansion. Advantages over suburban locations, assuming comparable rents, would be that the firm could retain its existing work force and be near industries in the core areas of the city.

In its 1993 proposal, DBEDC wrote of creating "an enterprise park" for high technology firms and traditional manufacturing over the full 40 acre development area along the expressway. The 1993 proposal includes a letter from the Lights of America corporation, manufacturers of fluorescent lights, saying that it "intends to occupy a 57,000 square foot facility in the Dorchester Bay Business Park," and provide 30 jobs in the \$16,000 - \$20,000 range. The proposal also indicates potential interest from Dynagraph, a South Boston based printer for an 80,000 square foot building if the rent would not exceed \$3.50/square foot, *including taxes*.⁹

The 1994 study findings are in line with DBEDC goals over the last two years, as well as the past interest of firms such as Lights of America or Dynagraph. Both firms cited may be classified as low-end renters. Lights of America was looking to employ people at wages between \$8 and \$10 per hour based on a 40 hour work week. Dynagraph was seeking space equivalent to the low end industrial rents of \$3.00 - \$4.50/ square foot triple net.¹⁰

Market Rents

The DBEDC study suggests that redeveloped space at 65 Bay St. could be rented in the range of \$4.50/square foot, triple net. Further, if the space were to be built to the specifications of the renter, the rent paid may be closer to \$5 given its greater utility to the user.

The Boston Edison Company has developed a rough survey of industrial rents for its service area based upon available information. It is not an exhaustive list, and the structure of the rents are not identified as net, double net or triple net, but the list might be used instructively to compare rents in Dorchester with proximate suburban locations.¹¹ Note also that the survey does not differentiate between type of industrial space, age or condition of buildings, or the various sub-neighborhoods in Dorchester or any other

⁹ Print shops tend to cluster near Boston because much of their business is derived from services to financial institutions.

¹⁰ Triple Net leases require the tenant to pay all operating expenses, including property taxes above the rental charge.

¹¹ Triple net leases are now standard. However, rents can be structured to include utilities and property taxes that would be paid by the property owner.

Boston community/ municipality. The table below compares Dorchester with those neighborhoods in Boston and suburban municipalities for which at least ten industrial rents are included per community sample.

Comparative Industrial Rents

| Dorchester, Selected Boston Neighborhoods and Selected Municipalities | No. in Sample | Average Rent Per Square Foot | Range of Rents in Sample: Low - High |
|--|----------------------|-------------------------------------|---|
| Dorchester | 7 | \$3.54 | \$2.00 - \$5.13 |
| Boston (proper) | 15 | \$4.79 | \$3.00 - \$6.25 |
| South Boston | 41 | \$4.49 | \$2.50 - \$8.00 |
| Canton | 22 | \$4.98 | \$1.75 - \$7.00 |
| Framingham | 12 | \$4.16 | \$2.95 - \$7.00 |
| Hopkinton | 11 | \$4.87 | \$2.95 - \$6.25 |
| Natick | 14 | \$5.48 | \$3.00 - \$7.00 |
| Needham | 11 | \$6.20 | \$4.25 - \$7.50 |
| Waltham | 17 | \$5.82 | \$3.50 - \$7.50 |
| Westwood | 23 | \$5.60 | \$3.50 - \$10.00 |
| Woburn | 68 | \$5.48 | \$3.00 - \$9.50 |

Note: not a scientific sample, use for broad comparison purposes only

Average rents in the Edison data are significantly higher in suburban communities than in Dorchester. Developers seeking a return of investment will naturally gravitate to where higher rents can be commanded, and invest in cleaner suburban locations.

While the average rents in Dorchester are the lowest on the above Table, it may be more instructive to look at the high end of the rent ranges in the sample than at the "average column." Though we do not know the age, condition, or lease stipulations of the industrial buildings in Edison data, the community samples show that someone is paying \$5.13 per square foot in Dorchester, \$6.25 in Boston proper and \$8 per square foot in South Boston. It is not unreasonable to speculate that a newly developed industrial facility in Dorchester may command more than \$5 per square foot, and possibly approach the top rents in Boston proper or South Boston.

Hazardous Waste Clean-up and the Development of the Site

The DBEDC Redevelopment Strategy study estimates hard and soft costs to build an 80,000 square foot building on the site to be \$6.1 million, or \$76/square foot based on 1994 dollars, exclusive of financing expenses. This estimate is based on the most optimistic assessment of \$40,000 for clean-up of the hazardous waste on the site. Costs associated with financing construction, including interest and fees, are estimated at 5.2% in DBEDC study. This is the low end of a spectrum pegged in the study to be from 4% -

11%, and is based on the assumption that public and/or quasi-public institutions participate in the debt.

Cost of Development

In the pages below, four development cost scenarios are discussed. Scenario 1 is the cost estimate of the draft DBEDC report. The three other scenarios are based on the cost estimates used in this report. Scenario 2 assumes the site is clean, and does not include costs associated with cleanup. In scenarios 3 and 4, a 100% contingency for hazardous waste clean up was added to the development costs. The cost of clean up for 65 Bay St. has been estimated at \$40,000 or \$225,000. Scenario 3 assumes a \$40,000 clean up expense plus contingency of \$40,000 Scenario 4 assumes a \$225,000 expense plus a \$225,000 contingency. As a major assumption, the cost of acquisition was held constant for all scenarios.

Estimated Development Costs: DBEDC Study

Scenario 1: DBEDC Study

(\$ thousands)

| Estimated Subtotals When Applicable | | Estimated Total Costs | |
|--|--------|---|-----------------|
| | | Site Acquisition | \$ 375 |
| Estimated Site Preparation | | | |
| Hazardous waste | \$ 40 | | |
| Lagoon drainage & other env. | 70 | | |
| Demolition | 225 | | |
| Dewar St. road work | 35 | | |
| Internal site work | 225 | | |
| Contingency @ 10% | 60 | | |
| | | Total Site Preparation | \$ 655 |
| | | Construction | \$ 4,200 |
| Estimated Soft Costs | | | |
| A/E @ 4% | \$ 194 | | |
| Insurance, real estate taxes, permits @ 4% | 194 | | |
| Administration @ 5% | 243 | | |
| Legal, prof. fees, admin. & marketing | 150 | | |
| Soft contingency @ 10% | 78 | | |
| | | Total Soft Costs | \$ 859 |
| | | Total Hard & Soft Costs | \$ 6,089 |
| Includes construction loan interest, fees, etc. at 5.2% of total hard & soft costs | | Financing & Associated Expenses during Development | \$ 317 |
| | | Total Development Costs | \$ 6,406 |

An 80,000 square foot building on a clean site would not require cleanup, drainage or demolition work, and therefore would cost over \$300,000 less than 65 Bay St. This is a conservative estimate not accounting for lower marketing costs or general internal site

work. The net difference is \$389,000 given the lower expenses needed for financing and set aside for site contingencies, as illustrated by the summary of Scenario 2 on the following page.

**Estimated Development Costs for Clean Site
Scenario 2**

| | |
|---------------------------|----------|
| Acquisition | \$ 375 |
| Site Preparation | \$ 286 |
| Construction | \$ 4,200 |
| Soft Costs | \$ 859 |
| Total Hard and Soft Costs | \$ 5,720 |
| Finance Expenses | \$ 297 |
| Total Development Costs | \$ 6,017 |

To estimate the feasibility of a 65 Bay St. project (Scenario 1), the DBEDC study proposed a simple test: that the projects net operating income before debt service must equal 10% of the project development cost (also known as the projects “capitalized value”). Assuming no public subsidies beyond low rates, and accepting the assumptions made in the report, the numbers have been reworked to estimate the required rents per square foot to make the project feasible and calculated the rents for scenarios 1 and 2.

The rent shown below in Scenario 2 is \$8.56 per square foot, \$.55 less than Scenario 1, but still well over the average rent and high rent in Dorchester as reported by the Boston Edison survey. The rent in Scenario 2 is below the high end rents shown in the survey for Westwood and Woburn. Given that the survey does not represent how expenses are calculated into the rents, it may also be of value to list communities with high rents over \$7 (communities with 10 or more rents sampled): Canton, Framingham, Natick, Needham, South Boston and Waltham.

| | Scenario 1 | Scenario 2 |
|--|------------|------------|
| Leasable Square Feet | 80,000 | 80,000 |
| Rent per square foot | 9.11 | 8.56 |
| Gross Potential Rental Income | 728,990 | 684,723 |
| Vacancy @ 5% | -36,450 | -34,236 |
| Effective Gross Income | 692,541 | 650,486 |
| Management fees, Reserves, & other expenses @ 7.5% | -51,941 | -48,786 |
| Net Operating Income | 640,600 | 601,700 |

The scenario developed by the DBEDC report (Scenario 1) pegs the cost of hazardous waste clean-up at \$40,000. This, unfortunately, is the starting point, and the costs may be dramatically greater. As noted previously, the cost of cleanup was estimated at \$40,000 or \$225,000 depending on whether the hazardous materials can be recycled onsite or need to be removed from the property. In addition, an operating “rule of thumb” is to allow for 100% contingency for hazardous waste cleanup.¹² Costs, including contingency set-asides for the 21E clean-up, appear to be understated.

| | Estimated Cost | Prudent Contingency @ 100% Over-run | Total Required |
|-----------------|----------------|--|----------------|
| Best Case | \$ 40,000 | \$ 40,000 | \$ 80,000 |
| Worst Case | \$225,000 | \$225,000 | \$450,000 |
| Very Worst Case | \$225,000 | \$225,000, BUT actual cost exceeds 100% over-run | unknown |

Scenarios 3 and 4 assume that the waste removal and contingency costs are \$80,000 and \$450,000, respectively, and break these expenses away from the general “site preparation

¹² This is what I extrapolated from a meeting of the 21E financing Task force Insurance Subcommittee. Participants of the meeting assumed that insurance coverage would have to be up to 100% of the estimated liability. Also data were cited from an insurance company that 86% of all clean-ups came within 200% over the original estimate.

category. The results show rent requirements at \$9.17/square foot for Scenario 3 and \$9.72/square foot for Scenario 4.

Scenario 3

| | | | |
|--------------------|----------|--------------------|----------|
| Acquisition | \$ 375 | Acquisition | \$ 375 |
| Site prep | \$ 611 | Site prep | \$ 611 |
| Waste Removal | \$ 40 | Waste Removal | \$ 225 |
| Contingency @ 100% | \$ 40 | Contingency @ 100% | \$ 225 |
| Construction | \$ 4,200 | Construction | \$ 4,200 |
| Soft Costs | \$ 859 | Soft Costs | \$ 859 |
| | \$ 6,125 | | \$ 6,495 |
| Finance @ 5.2% | \$ 319 | Finance @ 5.2% | \$ 338 |
| | | | |
| Total development | \$ 6,444 | Total development | \$ 6,833 |

Scenario 3 Scenario 4

| | | |
|--|-----------|-----------|
| Leasable Square Feet | 80,000 | 80,000 |
| Rent per square foot | 9.17 | 9.72 |
| | | |
| Gross Potential Rental Income | \$733,314 | \$777,582 |
| Vacancy @ 5% | -36,666 | -38,879 |
| Effective Gross Income | 696,649 | 738,703 |
| | | |
| Management fees, Reserves, & other expenses @ 7.5% | -52,249 | -55,403 |
| | | |
| Net Operating Income | \$644,400 | \$683,000 |

Summary of Estimated Rents Required by Scenario

| Scenario | Estimated Rent Per Square Foot | Difference in Rent From Clean Site |
|-------------------------|--------------------------------|------------------------------------|
| Clean Site (Scenario 2) | \$8.56 | |
| Scenario 1 | \$9.11 | \$0.55 |
| Scenario 3 | \$9.17 | \$0.61 |
| Scenario 4 | \$9.72 | \$1.16 |

Insurance

The purpose of hazardous waste environmental insurance is to insure the estimated cost of a hazardous waste clean-up against the potential of over-runs, mitigating risks for lenders and developers. If an estimated cost of a clean up is \$1, but the actual cost of the clean up is \$1.25, the insurance would cover the extra \$ 0.25, minus a deductible.

There are no rules defining the structure of an environmental insurance product that includes a public policy component, such as encouraging investments to reuse contaminated sites. Discussions within the Massachusetts 21 E Financing Task Force¹³ employed assumptions of a 100% maximum payout (if the estimate cleanup cost is \$1, than the maximum over-run covered by insurance would be \$1), and that insurance would be linked to a loan guarantee program for clean up.

Environmental insurance for this purpose is now available as a purely private sector product, but at a premium unaffordable for all but the largest developers on the most desirable sites. As an example, a member of the 21E Financing Task Force reported an actual quote by an insurance company to clean-up a contaminated site in the MAPC Core for development of a shopping center. The deductible and the premium equals 75% of the estimated clean-up costs. Presumable, this would be slightly less if the maximum payout equaled 100% of the estimate as opposed to 167% in this example (see the following table). If the premium is calculated on a straight 5:1 ratio (payout to premium), than a 100% coverage would cost \$240,000. At the lower expense, the total deductible plus premium equals 62% of the estimated clean-up cost.

¹³ The Task Force includes staff of the Department of Environmental Protection and the Executive Office of Economic Affairs who work on hazardous waste and economic stimulus issues, as well as private sector Committee members (attorneys, investment bankers and consultants).

Profile of a Private Insurance Estimate for Clean-Up of a 21E Site

| | | |
|---|-------------|---|
| Clean-up Estimate | \$1,200,000 | As reported by Committee member. The actual site is confidential. |
| Deductible | \$ 500,000 | 42% of the estimated cost |
| Maximum payout by the insurance company | \$2,000,000 | 167% of the estimated cost; this is above the 100% "rule of thumb" discussed at the Task Force Insurance Subcommittee meeting |
| Premium | \$400,000 | 33% of the estimated clean-up. If the premium is calculated on a straight 5:1 ratio (payout to premium), than a 100% coverage would cost \$240,000, and equal 20% of the estimate. |

Recalculating rents in scenarios 3 and 4 for 65 Bay St. on the assumption that the deductible and premium equals 62% of the cleanup costs as opposed to a 100% over-run reserve shows very little change. The total development costs are \$6.4 and 6.7 million respectively and the expected rents to sustain the project calculate to \$9.14 for Scenario 3 and \$9.59 for Scenario 4.

The same member of the Task Force said that s/he had secured a verbal commitment from insurance companies to limit the cost of premiums to 5% of the estimated clean-up costs if a pool of \$50,000,000 could be assembled. This commitment was based on the assumption of rigorous underwriting and site analysis, as well as coverage limited to sites that are not "too contaminated." The member also cautioned that the gap between working verbal commitments and contractual commitments may be significant, but also said that insurance companies are looking to develop new products and may be willing to be innovative to do so. At the 21E Insurance Subcommittee, members discussed deductibles in the range of 10% - 15%.

The clean-up for 65 Bay St. appears moderate, and could fit into a large insurance pool similar to the one described above. Scenarios 3 and 4 have been recalculated based on the program of a 5% premium and a 12.5% deductible.

Scenario 3
Recalculated (costs in \$ thousands)

| | | | |
|---|----------|---|----------|
| Acquisition | \$ 375 | Acquisition | \$ 375 |
| Site Prep | \$ 611 | Site Prep | \$ 611 |
| Waste Removal | \$ 40 | Waste Removal | \$ 225 |
| Premium at 5% and deductible at 12.5% of clean- up | \$ 7 | Premium at 5% and deductible at 12.5% of clean- up | \$ 39 |
| Construction | \$ 4,200 | Construction | \$ 4,200 |
| Soft Costs | \$ 859 | Soft Costs | \$ 859 |
| | \$ 6,092 | | \$ 6,309 |
| Finance @ 5.2% | \$ 317 | Finance @ 5.2% | \$ 328 |
| | | | |
| Total Development | \$ 6,409 | Total Development | \$ 6,637 |

| | | |
|--|-----------|-----------|
| Leasable Square Feet | 80,000 | 80,000 |
| Rent per square foot | \$9.12 | \$9.44 |
| | | |
| Gross Potential Rental Income | \$729,331 | \$755,277 |
| Vacancy @ 5% | -\$36,467 | -\$37,764 |
| Effective Gross Income | \$692,865 | \$717,514 |
| | | |
| Management Fees, Reserves, & Other Expenses @ 7.5% | -\$51,965 | -\$53,814 |
| | | |
| NOI | \$640,900 | \$663,700 |

The costs associated with an insurance pool are significantly cheaper, and therefore lower rents are needed to sustain the investment for development. The Table below compares the rents discussed above for scenarios 2, 3 and 4. To facilitate comparisons, the final column deducts \$295,000 of costs associated with cleaning the site in addition to the hazardous waste, including building demolition, draining the lagoon and removing debris and garbage.

Estimated Rents Per Square Foot

| Scenario | Clean | Proponent holds 100% over-run contingency | Private Insurance | Part of an Insurance Pool | If site were clean other than hazardous waste & with an Insurance Pool |
|-------------------------|--------|---|-------------------|---------------------------|--|
| Clean Site (Scenario 2) | \$8.56 | | | | |
| Scenario 3 | | \$9.17 | \$9.14 | \$9.12 | \$8.67 |
| Scenario 4 | | \$9.72 | \$9.59 | \$9.44 | \$9.00 |

Conclusions

If 65 Bay St. were clean other than its hazardous waste problem and DBEDC could participate in a structured insurance pool, it would be competitive with a clean suburban location for firms seeking new industrial space. Without an equity investment such as an economic development grant, however, rents appear higher than the range in Dorchester and Boston proper as reported in the Edison data, and are just beyond the highest rent reported from South Boston.

This case further indicates that significant cost factors limiting competitiveness of urban sites are hazardous waste and cleaning surface debris and other site specific preparation expenses that are inherited from previous users (such as draining the lagoon and demolition of a dilapidated building). Given the prevailing industrial rents in Dorchester, however, the DBEDC study concludes that the project is not feasible without significant public subsidies in addition to access to low cost debt.

DBEDC had approached the Economic Development Administration informally for an equity grant of over \$1 million. EDA, however, will not participate in a project if land is contaminated. During interviews, DBEDC staff have said that they are able to raise money to study the environmental contamination, but resources do not appear available to implement the study recommendations and clean the site, which is the initial key to a successful development of 65 Bay St.

SOURCES

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Land Resources: Hazardous Waste Sites in the MAPC Region (Chapter 21E)

Excerpted from the chapter, "Land Resources: Hazardous Waste Sites (Chapter 21E)," of
The Economic Development Element of MetroPlan 2000

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Land Resources: Hazardous Waste Sites (Chapter 21E)

The Bureau of Waste Site Cleanup of the Department of Environmental Protection (DEP) has identified 6,320 sites statewide and 3,209 sites in the MAPC region in its August 1993 report, Transition List of Confirmed Disposal Sites and Locations To Be Investigated. DEP lists potential and actual hazardous waste sites in five categories:

Locations To Be Investigated (LTBI):

Sites DEP considers reasonably likely to be disposal sites.

Confirmed:

Sites where hazardous materials or oil has been confirmed and require action

Waiver:

Non priority sites, where DEP has authorized a private party to proceed with cleanup without DEP oversight

Remedial:

Sites where remedial actions have been completed and no additional actions are planned

Deleted:

Sites that have been investigated and found not to be disposal sites, or disposal sites where further action is not warranted

The "good" categories are Waiver, Remedial and Deleted. Sites in these categories have been investigated and found be clean, have minor problems not requiring action, are being cleaned through private party, or have been cleaned. The LTBI category are sites "under a cloud," with a potential liability, they are virtually untouchable. The confirmed sites have been investigated and found to be contaminated. The confirmation, however, is a first step towards cleaning and eventual return to potential redevelopment.¹

Liabilities associated with hazardous waste cleanups are associated with current property owners. When property owners can not be identified or are bankrupt, then DEP is responsible for site investigation and cleanup. The Department's May 1993 site list stated that it only had the resources to work on 25 % of these so-called "orphan sites." Massachusetts voters rejected a statewide referendum that proposed to set a user fee on hazardous materials to fund the cleanup of these sites..

The 21E regulations discourage recycling of old buildings and previously developed land and encourage developers to avoid liability by purchasing lands not previously developed. Also, under previous regulations, soils and groundwater at all sites had to be cleaned to same level regardless of the locations or likely future uses and mandated that all groundwater had to be at drinking water standards, even when local groundwater was not part of the drinking water supply. The new regulations address some of these issues by determining the level of

¹ A list of confirmed hazardous waste sites sorted by land use, contaminants, types of containers, and problems at the sites is found on the last page of this section.

cleanup on a site-by-site need, including future use and environmental context. A site for a warehouse will be regulated differently than a future apartment building; and sites in MWRA communities will not have to be cleaned to the same level as in communities relying on well water.

The flexibility of these regulations may reduce barriers to redevelopment of older sites. However, it may take time to evaluate if binding agreements in the property deeds to limit use of the site (and thereby limiting its value) in trade for less stringent cleanup requirements will prove practical in the real estate market.

Data below will show that a suburban site is more likely to be identified, investigated, confirmed, deleted and cleaned than urban sites. The urban area of MAPC, for example, houses roughly 49 % of the region's population, and 44 % of the identified suspected or actual 21E sites. The Department of Environmental Protection identifies sites and labels them as Locations to be Investigated (LTBI). The regulations that originally framed 21E were based on environmental factors without regard for economic development implications. A confirmed suspected hazardous waste site in a suburban or rural community is far more likely to affect water quality where water is supplied from local sources, and thus more likely to attract the attention of the Commonwealth's environmental apparatus, than urban communities supplied from Quabbin Reservoir.

After sites are identified, property owners are responsible for investigation and implementation of appropriate solutions under DEP oversight. In this respect, market forces as well as regulations seem to encourage suburban clean up and discourage clean up of urban sites. First, under the initial 21E regulations, all sites had to be cleaned to the highest level of purity regardless of the intended use of the site or if the site could affect the local water supply.² These rules associated greater financial burden on older sites that have been developed and operated for generations, particularly older manufacturing sites, than in more recently developed sites. Also, because drinking water supply was not jeopardized in the MWRA district, property owners were under less pressure to investigate and, if necessary, implement remedial measures.

Second, property owners may perceive a higher marketability of land in the suburbs than urban sites, which fits with past trends and trends extended forecasts of suburban growth (sprawl) and urban disinvestment. These trends suggest a market incentive for suburban property owners to remove 21E "clouds" that is not generally afforded to property owners in urban areas.

The data below illustrate the scale of 21E problem in the MAPC region compared to Massachusetts, and among MAPC subregions (the appendix shows community specific listings in the MAPC region). In all three cases the more urban areas show a higher proportion of identified sites still require investigation, which in turn fewer have been confirmed or cleared of containing hazardous waste 21E.

²The regulations were recently revised, and are being revised again at this writing.

Of the total identified 6,320 sites statewide, 3209 (50.8%) are in the MAPC region, which is roughly commensurate with the region's share of Massachusetts' population.³ Data below, however, show that the region has a higher share of LTBI sites, and lower shares of confirmed and remedial sites than its 51% proportion of identified actual or potential 21E Sites. The low proportion of Deleted sites in the region is consistent with the high proportion of LTBI sites that require investigation. Moreover, the data indicate that potentially hazardous waste sites outside the region are more likely to be investigated than sites found in the MAPC service area.

| | Massachusetts | MAPC Region | Region as % of State |
|-------------------------------|---------------|-------------|----------------------|
| Total Sites Identified | 6320 | 3209 | 51% |
| LTBI | 2875 | 1780 | 62% |
| Confirmed | 1879 | 659 | 35% |
| Waiver | 1113 | 633 | 57% |
| Remedial | 263 | 89 | 34% |
| Deleted | 198 | 48 | 24% |

| | Statewide | MAPC Region |
|-------------------------------|--------------|--------------|
| Total Sites Identified | 6,320 | 3,209 |
| % LTBI | 45% | 55% |
| % Confirmed | 30% | 21% |
| % Waiver | 18% | 20% |
| % Remedial | 4% | 3% |
| % Deleted | 3% | 1% |

³An additional 8 sites are listed as "Errata," locations listed in error in previous reports by DEP. Of the 8 sites listed, 7 are in the region.

POTENTIAL AND ACTUAL 21E SITES BY MAPC SUBREGION

| Subregion | Number of Potential 21E Sites | No. LTBI Locations | Confirmed 21E Sites | Waiver | Remedial | Deleted |
|----------------|-------------------------------|--------------------|---------------------|------------|-----------|-----------|
| Inner Core | 1546 | 942 | 230 | 321 | 38 | 10 |
| MAGIC | 149 | 47 | 65 | 30 | 3 | 4 |
| MetroWest | 275 | 136 | 73 | 52 | 6 | 3 |
| North Suburban | 381 | 197 | 102 | 63 | 12 | 0 |
| North Shore | 309 | 191 | 40 | 65 | 10 | 13 |
| South Shore | 190 | 90 | 63 | 24 | 8 | 3 |
| SWAP | 114 | 40 | 42 | 24 | 5 | 7 |
| TRIC | 303 | 156 | 70 | 66 | 8 | 8 |
| TOTALS | 3209 | 1780 | 659 | 633 | 89 | 48 |

Note: Totals do not add because three communities in multiple subregions.

**DISTRIBUTION OF
POTENTIAL AND ACTUAL 21E SITES BY MAPC SUBREGION**

| Subregion | Number of Potential 21E Sites | No. LTBI Locations | Confirmed | Waiver | Remedial | Deleted |
|----------------|-------------------------------|--------------------|-----------|--------|----------|---------|
| Inner Core | 48 % | 53 % | 35 % | 51 % | 43 % | 21 % |
| MAGIC | 5 % | 3 % | 10 % | 5 % | 3 % | 8 % |
| MetroWest | 9 % | 8 % | 11 % | 8 % | 7 % | 6 % |
| North Suburban | 12 % | 11 % | 15 % | 10 % | 13 % | 0 % |
| North Shore | 10 % | 11 % | 6 % | 10 % | 11 % | 27 % |
| South Shore | 6 % | 5 % | 10 % | 4 % | 9 % | 6 % |
| SWAP | 4 % | 2 % | 6 % | 4 % | 6 % | 15 % |
| TRIC | 9 % | 9 % | 11 % | 10 % | 9 % | 17 % |

Note: Columns exceed 100% because three communities are in multiple subregions.

POTENTIAL AND IDENTIFIED 21E SITES BY COMMUNITY

| | No 21E sites | No. LTBI 21E Sites | Confirmed 21E Sites | Waiver | Remedial | Deleted | Errata | Ot |
|------------|--------------|--------------------|---------------------|--------|----------|---------|--------|----|
| ACTON | 21 | 4 | 9 | 7 | 0 | 1 | | |
| ARLINGTON | 35 | 21 | 7 | 6 | 1 | 0 | | |
| ASHLAND | 18 | 11 | 5 | 0 | 2 | 0 | | |
| BEDFORD | 37 | 10 | 21 | 4 | 2 | 0 | | |
| BELLINGHAM | 10 | 4 | 3 | 2 | 1 | 0 | | |
| BELMONT | 21 | 13 | 3 | 5 | 0 | 0 | | |
| BEVERLY | 39 | 18 | 11 | 7 | 2 | 0 | | 1 |
| BOLTON | 0 | 0 | | 0 | 0 | 0 | | |
| BOSTON | 518 | 335 | 73 | 98 | 8 | 2 | | 2 |
| BOXBOROUGH | 3 | 0 | 3 | 0 | 0 | 0 | | |
| BRAINTREE | 57 | 30 | 15 | 10 | 2 | 0 | | |
| BROOKLINE | 36 | 22 | 3 | 8 | 3 | 0 | | |
| BURLINGTON | 43 | 16 | 21 | 3 | 1 | 1 | | 1 |
| CAMBRIDGE | 139 | 86 | 23 | 26 | 4 | 0 | | |
| CANTON | 47 | 26 | 12 | 7 | 1 | 1 | | |
| CARLISLE | 5 | 2 | 2 | 0 | 1 | 0 | | |
| CHELSEA | 38 | 22 | 3 | 10 | 1 | 2 | | |
| COHASSET | 17 | 15 | 1 | 0 | 1 | 0 | | |
| CONCORD | 24 | 18 | 2 | 1 | 1 | 2 | | |
| DANVERS | 43 | 25 | 6 | 11 | 0 | 1 | | |
| DEDHAM | 34 | 20 | 3 | 9 | 2 | 0 | | |
| DOVER | 8 | 6 | 2 | 0 | 0 | 0 | | |
| DUXBURY | 2 | 0 | 2 | 0 | 0 | 0 | | |
| ESSEX | 2 | 2 | 0 | 0 | 0 | 0 | | |
| EVERETT | 43 | 23 | 7 | 10 | 1 | 2 | | |
| FOXBOROUGH | 19 | 5 | 13 | 1 | 0 | 0 | | |
| FRAMINGHAM | 100 | 55 | 17 | 26 | 0 | 2 | | |
| FRANKLIN | 11 | 4 | 5 | 2 | 0 | 0 | | |
| GLOUCESTER | 24 | 15 | 2 | 7 | 0 | 0 | | |
| HAMILTON | 1 | 0 | 1 | 0 | 0 | 0 | | |
| HANOVER | 14 | 6 | 3 | 5 | 0 | 0 | | |
| HINGHAM | 31 | 18 | 8 | 4 | 1 | 0 | | |
| HOLBROOK | 14 | 8 | 1 | 4 | 1 | 0 | | |
| HOLLISTON | 11 | 1 | 6 | 2 | 2 | 0 | | |
| HOPKINTON | 12 | 5 | 2 | 4 | 1 | 0 | | |
| HUDSON | 21 | 5 | 12 | 3 | 0 | 1 | | |
| HULL | 6 | 4 | 2 | 0 | 0 | 0 | | |
| IPSWICH | 16 | 11 | 2 | 3 | 0 | 0 | | |
| LEXINGTON | 26 | 17 | 4 | 4 | 1 | 0 | | |
| LINCOLN | 9 | 5 | 3 | 1 | 0 | 0 | | |
| LITTLETON | 12 | 2 | 5 | 5 | 0 | 0 | | |
| LYNN | 75 | 50 | 12 | 10 | 1 | 2 | | |
| LYNNFIELD | 8 | 5 | 1 | 2 | 0 | 0 | | |
| MALDEN | 57 | 35 | 9 | 13 | 0 | 0 | | |

| | No 21E sites | No. LTBI | Confirmed 21E Sites | Waiver | Remedial | Deleted | errata |
|---------------|--------------|----------|---------------------|--------|----------|---------|--------|
| MANCHESTER | 4 | 1 | 1 | 2 | 0 | 0 | 0 |
| MARBLEHEAD | 13 | 10 | 1 | 2 | 0 | 0 | 0 |
| MARLBOROUGH | 33 | 8 | 13 | 12 | 0 | 0 | 0 |
| MARSHFIELD | 15 | 3 | 10 | 1 | 1 | 0 | 0 |
| MAYNARD | 9 | 2 | 4 | 2 | 0 | 0 | 0 |
| MEDFIELD | 6 | 4 | 0 | 2 | 0 | 0 | 0 |
| MEDFORD | 59 | 30 | 8 | 16 | 5 | 0 | 0 |
| MEDWAY | 3 | 0 | 1 | 2 | 0 | 0 | 0 |
| MELROSE | 13 | 9 | 2 | 2 | 0 | 0 | 0 |
| MIDDLETON | 12 | 6 | 3 | 3 | 0 | 0 | 0 |
| MILFORD | 21 | 5 | 12 | 3 | 1 | 0 | 0 |
| MILLIS | 15 | 4 | 6 | 3 | 0 | 2 | 0 |
| MILTON | 9 | 5 | 0 | 3 | 1 | 0 | 0 |
| NAHANT | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NATICK | 55 | 31 | 12 | 7 | 2 | 3 | 0 |
| NEEDHAM | 45 | 24 | 7 | 12 | 1 | 1 | 0 |
| NEWTON | 79 | 56 | 9 | 12 | 1 | 1 | 0 |
| NORFOLK | 12 | 8 | 2 | 1 | 0 | 1 | 0 |
| NORTH READING | 22 | 12 | 7 | 3 | 0 | 0 | 0 |
| NORWELL | 13 | 2 | 10 | 0 | 0 | 1 | 0 |
| NORWOOD | 59 | 31 | 11 | 16 | 1 | 0 | 0 |
| PEABODY | 71 | 49 | 4 | 12 | 4 | 1 | 0 |
| PEMBROKE | 7 | 1 | 1 | 2 | 1 | 2 | 0 |
| QUINCY | 84 | 51 | 13 | 18 | 1 | 1 | 0 |
| RANDOLPH | 21 | 12 | 4 | 4 | 1 | 0 | 0 |
| READING | 25 | 14 | 1 | 8 | 2 | 0 | 0 |
| REVERE | 39 | 20 | 7 | 9 | 1 | 2 | 0 |
| ROCKLAND | 21 | 8 | 9 | 3 | 0 | 1 | 0 |
| ROCKPORT | 6 | 4 | 1 | 1 | 0 | 0 | 0 |
| SALEM | 55 | 33 | 7 | 13 | 2 | 0 | 0 |
| SAUGUS | 23 | 9 | 4 | 9 | 1 | 0 | 0 |
| SCITUATE | 8 | 1 | 4 | 1 | 2 | 0 | 0 |
| SHARON | 4 | 0 | 3 | 1 | 0 | 0 | 0 |
| SHERBORN | 2 | 1 | 0 | 1 | 0 | 0 | 0 |
| SOMERVILLE | 67 | 41 | 8 | 17 | 1 | 0 | 0 |
| SOUTHBOROUGH | 8 | 1 | 5 | 1 | 0 | 1 | 0 |
| STONEHAM | 20 | 10 | 4 | 6 | 0 | 0 | 0 |
| STOUGHTON | 25 | 8 | 11 | 6 | 0 | 0 | 0 |
| STOW | 5 | 1 | 4 | 0 | 0 | 0 | 0 |
| SUDSBURY | 17 | 5 | 11 | 0 | 1 | 0 | 0 |
| SWAMPSCOTT | 10 | 8 | 0 | 0 | 2 | 0 | 0 |
| TOPSFIELD | 13 | 8 | 1 | 3 | 0 | 1 | 0 |
| WAKEFIELD | 31 | 17 | 6 | 6 | 1 | 1 | 0 |

| | No 21E sites | No. LTBI | Confirmed 21E Sites | Waiver | Remedial | Deleted | errata |
|---------------|--------------|--------------|---------------------|------------|-----------|-----------|----------|
| WALPOLE | 32 | 17 | 5 | 7 | 1 | 1 | |
| WALTHAM | 80 | 42 | 13 | 20 | 2 | 3 | |
| WATERTOWN | 45 | 22 | 6 | 14 | 3 | 0 | |
| WAYLAND | 17 | 8 | 5 | 2 | 1 | 1 | |
| WELLESLEY | 15 | 10 | 3 | 3 | 0 | 0 | |
| WENHAM | 2 | 1 | 0 | 1 | 0 | 0 | |
| WESTON | 11 | 7 | 2 | 1 | 0 | 1 | |
| WESTWOOD | 16 | 10 | 3 | 2 | 1 | 0 | |
| WEYMOUTH | 56 | 32 | 13 | 8 | 2 | 1 | |
| WILMINGTON | 50 | 25 | 9 | 11 | 2 | 3 | |
| WINCHESTER | 17 | 10 | 6 | 1 | 0 | 0 | |
| WINTHROP | 5 | 5 | 0 | 0 | 0 | 0 | |
| WOBURN | 95 | 56 | 19 | 14 | 3 | 2 | |
| WRENTHAM | 9 | 2 | 3 | 4 | 0 | 0 | |
| TOTALS | 3,216 | 1,780 | 659 | 633 | 89 | 48 | 7 |

Note: Sites in the Errata column are not included in tables in the body of the text.

DESCRIPTION TOTALS FOR CONFIRMED HAZARDOUS WASTE SITES IN MASSACHUSETTS AS OF APRIL 10, 1995

| Types of sites | | Contaminant(s) at Sites | | | Container at Sites | | | Problems at Sites | | |
|----------------|--------------|-------------------------|-----------------|--------|--------------------|--------|---------------|-------------------|---------|--|
| Type | Number | % of Total | Type | Number | Type | Number | Type | Releases | Threats | |
| Gas Station | 1,111 | 36.5% | Gasoline | 1,314 | L.U.S.T. | 1,789 | Soil | 2,638 | 55 | |
| Commercial | 478 | 15.7% | Petroleum | 1,095 | Uncontained | 330 | Ground Water | 2,377 | 285 | |
| Industrial | 404 | 13.3% | V.O.C.'s | 571 | Hose/Pipe | 182 | Surface Water | 165 | 163 | |
| Manufacturer | 398 | 13.1% | Chlor. Solvents | 513 | Drums | 127 | Wetland | 55 | 49 | |
| Residence | 98 | 3.2% | Virgin Oil | 486 | L.A.S.T. | 117 | Air | 36 | 552 | |
| Tank Farm | 92 | 3.0% | Waste Oil | 337 | Lagoon/Pit | 76 | | | | |
| Municipal | 85 | 2.8% | Metals | 291 | Dry Well | 66 | | | | |
| Repair Yard | 70 | 2.3% | Organics | 179 | Septic Tank | 53 | | | | |
| Military | 70 | 2.3% | P.C.B.'s | 114 | Unknown | 30 | | | | |
| Landfill | 50 | 1.6% | Cyanide | 63 | Transformer | 28 | | | | |
| Spill | 49 | 1.6% | Coal Gas | 45 | Tanker | 22 | | | | |
| Undeveloped | 45 | 1.5% | Pesticides | 30 | Vehicle | 14 | | | | |
| Junk Yard | 30 | 1.0% | Wastewater | 28 | | | | | | |
| Utility | 26 | 0.9% | Sludge | 25 | | | | | | |
| Coal Gas Plant | 20 | 0.7% | Inorganic | 14 | | | | | | |
| Waterbody | 5 | 0.2% | | | | | | | | |
| Well | 4 | 0.1% | | | | | | | | |
| Fire | 4 | 0.1% | | | | | | | | |
| Sewer | 1 | 0.0% | | | | | | | | |
| TOTAL | 3,040 | 100.0% | | | | | | | | |

Note: This table was created for the Inner core Subregion and does not appear in the Economic Development Element of MetroPlan 2000.



Commonwealth of Massachusetts
Executive Office of Environmental Affairs

Department of Environmental Protection

William F. Weld
Governor
Trudy Coxe
Secretary, EOEA
David B. Struhs
Commissioner

August 12, 1993

THE 1993 MASSACHUSETTS CONTINGENCY PLAN - A NEW APPROACH TO CLEANING UP DISPOSAL SITES

The Commonwealth's Waste Site Cleanup Program has been redesigned to streamline and accelerate cleanup of releases of oil and hazardous material to the environment. In July, 1992, amendments to the Massachusetts Superfund Law (M.G.L. c. 21E) requiring the redesigned Program were signed into law by Governor Weld. In accordance with these amendments, the regulations for assessing and cleaning up oil and hazardous material releases (the Massachusetts Contingency Plan or "MCP", which was originally promulgated in 1988) were substantially revised on July 30, 1993. Most of the new regulations take effect on October 1, 1993; specific requirements for the transition of sites that have already been reported to the Department of Environmental Protection took effect on August 2, 1993.

These regulations have been developed with the assistance of an Advisory Committee composed of representatives of industry, consultants, attorneys, environmentalists, public health advocates and local officials. Committee discussions have helped design a program which balances the need for certainty and flexibility by the regulated community with the needs of all Massachusetts citizens for timely and permanent cleanups which leave no significant risk to health, safety, public welfare, and the environment.

BACKGROUND

The previous Waste Site Cleanup Program and regulations relied heavily on direct DEP oversight of privately-funded assessment and cleanup actions. Over the years, concerns about the program's effectiveness and funding were raised by a wide variety of interested parties, including DEP itself. In July 1990, DEP began working with a Study Committee to develop recommendations for resolving these concerns. DEP and the Study Committee recommended a reallocation of responsibilities between the private and public sector, with:

- a strengthened and expanded private role which encourages those legally responsible for sites to conduct response actions in a timely way, and
- a focused role for DEP that concentrates limited government resources on the sites that the private sector cannot or will not handle, and on those tasks that the public sector has to perform to ensure that private sector actions are appropriate.

These recommendations formed the basis of the 1992 amendments to M.G.L. c. 21E and the 1993 Massachusetts Contingency Plan.

THE REDESIGNED PROGRAM - The New Roadmap

The redesigned program has been described in terms of a highway, with a variety of entrance and exit points, fast and slow lanes, and signs to describe how releases will be identified and addressed with a level of DEP oversight that is appropriate for each site. The 1993 Massachusetts Contingency Plan serves as the "roadmap" for conducting assessments and cleanups. Within limits, the pace of cleanup is determined by the private sector for voluntary cleanups and by DEP for publicly funded actions. The 1993 MCP provides "off-ramps" at any point where DEP's standards for cleanup have been met, and establish basic performance standards (and "driving speeds") for moving through the process.

In the redesigned program, the Department will receive notification of releases and threats of release of oil and hazardous material that exceed specific thresholds. Within one year of this notification, all sites that have not yet been cleaned up must be evaluated using a quantitative ranking system, and classified in either "Tier I" or "Tier II". At Tier I sites, a permit must be obtained from the Department to conduct comprehensive response actions, and the most serious of these sites (Tier IA) will be subject to continuous agency oversight. At Tier II sites, comprehensive response actions are also required, but these can be conducted without oversight by the Waste Site Cleanup Program. At the conclusion of response activities, a Response Action Outcome Statement must be filed with the Department to document the achievement of a permanent or temporary solution.

KEY FEATURES OF THE NEW PROGRAM AND MCP

- **Licensed Site Professionals (LSPs)**

Reliance on Hazardous Waste Site Cleanup Professionals (also called "Licensed Site Professionals", or "LSPs"), experts in assessment and cleanup who are licensed by the Commonwealth, is a cornerstone of the new program. LSPs will be employed by people conducting response actions to oversee assessment and cleanup actions and ensure that such actions are performed in compliance with the MCP. By hiring an LSP, people conducting a response action can proceed at most sites on their own and at their own pace. LSPs coordinate response actions and render opinions that response actions meet the MCP's requirements. Throughout the new MCP, specific points in the response action process that require LSPs to provide opinions are identified. The regulations that establish the licensing process and criteria can be found in 309 CMR 1.00-8.00. A list of LSPs is available from the Board of Registration of Hazardous Waste Site Cleanup Professionals (telephone: 617/292-5556)

- **Best Response Action Management Approach (BRAMA)**

The 1993 MCP sets a new general performance standard for conducting response actions as well as specific performance standards for each element of the program, and allows room for professional discretion on how to meet them. The new general performance standard for assessment and remedial actions performed under Chapter 21E and the MCP is the "Best Response Action Management Approach" (BRAMA). The BRAMA standard is "the level of diligence" necessary to ensure that all response actions comply with the MCP, are adequate to protect public health and the environment, and apply current commonly accepted professional engineering and scientific standards and practices. The BRAMA standard can be found in the new MCP at 310 CMR 40.0190.

- **Notification Thresholds**

For the first time, the 1993 Massachusetts Contingency Plan clearly articulates which releases and threats of release of oil or hazardous material do and do not require reporting to the Department. The 1993 MCP adds specific thresholds and time frames for notification of "historical releases" and "imminent hazards" to the existing criteria for reporting sudden releases and threats of release. See Subpart C of the new MCP (310 CMR 40.0300).

- **Risk Reduction Measures and Accelerated Cleanups**

Early risk reduction measures and accelerated assessment and remedial actions are encouraged and in some cases mandated. The need for early actions must be evaluated, and **Immediate Response Actions** are required under specific conditions (in response to sudden releases, imminent hazards, and other time-critical conditions). Other early actions, **Release Abatement Measures**, that reduce risks and lower future cleanup costs can also be conducted if those doing the cleanup want to do so. These risk reduction measures may allow complete cleanup of smaller releases without comprehensive response actions, or may improve site conditions (and lower the site's numerical ranking) at sites where longer-term cleanup is required. See Subpart D of the new MCP (310 CMR 40.0400).

- **Site Ranking**

Releases that have not been cleaned up within one year of notification must be scored using the **Numerical Ranking System (NRS)**. The NRS ranks sites using specific criteria and a scoring system based on the existing and potential risks posed by the site to public health, natural resources and environmental receptors. Generally, sites that score below 350 are Tier II sites. Assessment and cleanup actions can proceed at these sites under the oversight of an LSP and without a Waste Site Cleanup permit or approval (remedial actions may require approval(s) from other DEP programs, and from other agencies).

Sites that score 350 or above, as well as sites that are located within certain groundwater resource areas, are Tier I disposal sites. These sites require a 21E permit to proceed with further response actions. See Subpart E of the new MCP (310 CMR 40.0500).

- Permits for Tier I Sites

The NRS score is also used as a basis for separating Tier I sites into three categories for permitting - Tier IA, IB, and IC. In addition to the NRS score, DEP will consider factors such as the complexity of the site conditions and the compliance history of the potentially responsible party in determining the appropriate category of Tier I permit. The most complicated and serious sites will be classified as Tier IA. Response actions at these sites will be coordinated by a Licensed Site Professional with direct oversight by DEP staff. Response actions at Tier IB and IC sites will be managed by a Licensed Site Professional, and can proceed without DEP's direct oversight. The permit process is described in the new MCP in Subpart G (310 CMR 40.0700).

- Cleanup Requirements

Chapter 21E establishes a standard for deciding when response actions are complete in terms of the risks remaining at a site: a condition of "No Significant Risk" of harm to health, safety, public welfare, or the environment must exist or be achieved at each site. This standard requires consideration of both current and reasonably foreseeable uses of a site and its surrounding area. In addition, the statute requires that a cleanup reach levels of oil and hazardous material that would exist in the absence of the disposal site if feasible.

The 1993 MCP provides three options for defining a level of "no significant risk" or "how clean is clean enough": Method 1 uses clear numeric standards for more than 100 common chemicals in soil and groundwater; Method 2 allows for some adjustments in these standards to reflect site-specific conditions; and Method 3 allows cleanup requirement goals to be defined on the basis of a site-specific risk assessment. With some limits, people conducting response actions can choose among these methods. These methods are described in Subpart I of the new MCP (310 CMR 40.0900).

- Cleanup Endpoints

The 1993 MCP establishes procedures for Response Action Outcomes which document that a permanent or temporary solution has been reached. Where it is not feasible to achieve a permanent solution, the MCP recognizes where a temporary solution (a major milestone indicating that risks have been reduced, but a "no significant risk" level cannot be maintained for any foreseeable period of time) can be achieved. The 1993 MCP also establishes Activity and Use Limitations which are deed restrictions or deed notices used to inform future property owners and users that a cleanup requires certain limits on activities at that site, unless additional response actions are conducted. Subpart J of the new MCP describes these endpoints (310 CMR 40.1000).

- Ensuring Compliance

DEP is required to audit response actions at 20% of sites in the Waste Site Cleanup Program on an annual basis. The audit program will be supported by annual compliance fees

paid for all sites which have not reached a Response Action Outcome within one year of notification, and by one-time fees which cover DEP's costs of auditing some specific types of actions. The audit program is described in Subpart K of the new MCP (310 CMR 40.1100).

- **Public Information and Involvement**

The MCP's public involvement requirements have been revised to establish that the party conducting the response action is now also responsible for conducting public involvement activities (e.g., preparing and implementing a public involvement plan if one is requested). At most sites, this will place responsibility for public involvement with the people conducting response actions. The 1993 MCP also clarifies when local officials must be notified and when legal notices must be published to provide information about the status of response actions. Public involvement provisions can be found in Subpart N of the new MCP (310 CMR 40.1400).

- **Transition Provisions for Sites under the previous MCP**

The regulations establish rules for getting the 5000+ sites and "locations to be investigated" that were reported to DEP under the former waste site cleanup program into the appropriate boxes in the new program. The transition provisions honor existing approvals (e.g., waivers), and provide opportunities to those legally responsible to use the new reporting thresholds and cleanup standards to determine the best approach. The transition provisions also set deadlines for those responsible for cleanups to tell DEP how they will proceed. See Subpart F of the new MCP (310 CMR 40.0600).

- **Adequately Regulated Sites**

Those responsible for sites that are regulated both by Chapter 21E and another state or federal environmental program may no longer have to conduct response actions in two separate regulatory universes under the 1993 MCP. These regulations contain specific provisions for deferring application of all or part of the MCP at sites that are "adequately regulated" by another set of regulations. Specific provisions are included for sites regulated by the federal Superfund program, and DEP's programs for management of hazardous and solid wastes. These requirements are described in the 1993 MCP (see 310 CMR 40.0110).

- **Fees**

To ensure that the redesigned Waste Site Cleanup Program works as intended, and can keep pace with private sector responses, DEP must be able to review permit applications and make timely determinations, and also audit response actions to ensure that they are adequate. To provide resources for these activities, DEP has added specific permit and annual compliance fees to the Department's fee regulations. These regulations also establish money-back deadlines for permit reviews. See the Department's fee regulations, 310 CMR 4.00.

EVALUATING THE NEW PROGRAM

The Department is concerned that the new Waste Site Cleanup Program works as efficiently and as effectively as possible, and will be reviewing implementation of the new program with the Waste Site Cleanup Program Advisory Committee. To help the Department understand how the program is working, we welcome your comments about the new MCP.

We look forward to working with you to develop a redesigned Waste Site Cleanup Program that is both practical and protective of the Commonwealth's health and environment.



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CLEANING UP CONTAMINATED PROPERTY: THE NEW MASSACHUSETTS WASTE SITE CLEANUP PROGRAM

THE PROBLEM:

In 1990, seven years after the "Massachusetts Superfund Law" (M.G.L. c. 21E) was enacted, less than one quarter of the 4,200+ confirmed and suspected hazardous waste sites were being assessed or cleaned up, and the backlog of sites requiring attention by the Department of Environmental Protection (DEP) was growing rapidly. Concerns about the cleanup program were being raised by a wide variety of interests, including DEP itself: regulatory barriers were preventing sites from being assessed and cleaned up; DEP was not able to devote its resources to finding and cleaning up the most serious waste sites; and there was a lack of clear standards and guidelines defining when and how sites should be cleaned up.

THE SOLUTION:

Based on amendments to Chapter 21E signed into law by Governor Weld in July 1992, DEP has redesigned the Waste Site Cleanup Program to provide new opportunities and incentives for private parties to respond to contamination, and to allow the State to focus its limited resources on the tasks that require government attention. New rules for reporting, assessing, and cleaning up releases of oil and hazardous material were promulgated in July 1993. These rules (the Massachusetts Contingency Plan, or "MCP") became effective October 1, 1993.

Key features of the new program have been designed specifically to encourage private sector cleanups:

- * reliance on Licensed Site Professionals (LSPs), experts in assessment and cleanup who are licensed by the Commonwealth and can be hired by the private sector to manage/oversee cleanups, allowing assessments and cleanups to proceed at most sites without delays due to the need to get DEP approvals.

- * opportunities and incentives for cleaning up small problems quickly, and avoiding more structured and expensive response action requirements. In some cases, "Limited Removal Actions" performed before a notification deadline can keep a site out of the system entirely. Cleanups finished within 120 days of their notification to DEP are not required to pay fees. "Release Abatement Measures" can be conducted to reduce risks, limit the spread of contamination at sites that have been reported to DEP, and in some cases remove the need for

additional response actions (DEP approves plans for these measures within 21 days of their receipt, or presumptively approves them).

- * a level of DEP oversight of response actions that fits the nature of the problem. DEP continues to oversee cleanup of spills and situations presenting "imminent hazards". If cleanup is not completed within one year, sites must be classified as Tier I or Tier II, using a numerical ranking system. The site's classification determines the level of DEP oversight: no direct oversight is required for Tier II sites (work is managed by an LSP, and DEP will audit some of these response actions). A permit is required for Tier I sites before proceeding with comprehensive response actions. DEP directly oversees work at the worst/most complicated sites (Tier IA). Response actions at Tier IB and IC sites are managed by an LSP once the permit is issued.
- * DEP audits of response actions at 20% of the sites that are in the system in a given year to ensure that private sector cleanups are done properly.

The new Waste Site Cleanup Program has streamlined requirements for response actions, providing greater certainty and a more flexible process:

- * clear notification thresholds for historical contamination that screen out problems that are not likely to cause a significant risk to public health and the environment;
- * reduction from six upfront DEP approvals to none for most sites; and one for many others, reducing processing time and costs for the private sector;
- * performance standards that allow the level of investigation to be set by the nature of the problem (DEP sets standards but does not specify a rigid approach for meeting them);
- * numerical standards for deciding "how clean is clean enough" for 107 of the most common contaminants, and the ability to factor in site-specific information (e.g., site-specific risk assessments) where appropriate;
- * ability to tailor cleanup decisions to fit activities that are likely to occur at the site and likely exposures to oil/hazardous materials that remain at the site, and to use "Activity and Use Limitations" (deed restrictions and deed notices) that lock in the assumptions that were used to select "less clean" cleanup standards, and to provide critical information to future property owners about the status of response actions; and
- * documenting "Response Action Outcomes", which are clear endpoints to the process, so that lenders, future owners and tenants (etc.) can find out what has been done, and what type of solution (permanent/temporary) was reached.

Other incentives for private parties to undertake response actions were also included in the amendments to M.G.L. c. 21E:

- * the liability of secured lenders and fiduciaries was clarified to ensure that, as long as they meet certain requirements, they will not be held responsible for cleanup costs. These

clarifications should encourage lending and trust management of contaminated properties.

- * the rights of liable parties and others who respond to releases were clarified to make it easier to get other liability parties to contribute to response actions.
- * a dispute resolution mechanism has been provided that private parties must use to obtain participation from other possibly liable parties.
- * private parties conducting response actions have the right to gain access to contaminated property for assessment and cleanup work.

The redesign of the Waste Site Cleanup Program is still on-going. New initiatives to watch for are:

- * development of policies and guidance throughout the next year to assist both DEP staff and LSPs in implementing the new MCP (two major topics are management of contaminated soils and streamlining of permit requirements of other DEP programs for response actions)
- * revisions in the MCP to clarify certain requirements in the Fall (promulgation expected in January 1995). Key issues are identifying aquifers that are likely to be future drinking water supplies (and excluding aquifers underlying heavily urbanized/industrialized areas), defining the responsibilities of downstream/downgradient property owners who did not cause the problem and who do not control the source of contamination, closing out small spills and other problems quickly with a minimum of paperwork)
- * new tools to make financial resources available to parties who want to perform response actions:
 - ** a pilot "Covenant Not to Sue" program to open this Fall, which would relieve a new owner or tenant who voluntarily cleans up of future liability under M.G.L. c. 21E, once response actions have been completed (Covenants would be targeted to areas in which the Commonwealth is focusing its economic development efforts.)
 - ** an outreach program to provide information about the recent improvements in the Waste Site Cleanup Program to lenders, their attorneys and environmental consultants, and the development community.

Discussions are continuing about ways the Commonwealth can encourage lenders to provide loans for cleanups (e.g., loan guarantees and other types of credit enhancements), and a fund that would help finance cleanup of contaminated sites in the Commonwealth's most economically distressed areas.





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February 9, 1995

CLEAN SITES INITIATIVE ESTABLISHES COVENANTS TO ENSURE CLEANUPS, PREVENT FUTURE STATE LAWSUITS AT HAZARDOUS WASTE SITES

PURPOSE: Covenants between the Commonwealth of Massachusetts and prospective buyers or tenants will encourage cleanup and redevelopment of contaminated property in areas targeted by the Commonwealth for economic development, by ending liability for releases that occurred in the past once cleanup is complete.

WHAT A COVENANT WILL PROVIDE: With a Covenant, the prospective buyer/tenant agrees to ensure that known contamination of a property will be cleaned up as required by law. The cleanup may be conducted by the new owner or tenant, a former owner, or another party. Cleanups must eventually reach a Permanent Solution at the property. All of the tools provided by the 1993 Massachusetts Contingency Plan are available to be used (e.g., Temporary Solutions, Activity and Use Limitations, Declarations of Technical, Legal or Financial Inability, etc.).

In turn, the Commonwealth agrees not to sue the new owner or tenant for response action costs or damages once the site has been cleaned up if contamination is later found on the property. Once a property has been cleaned up, the Covenant will apply to the land identified in a Response Action Outcome Statement filed with DEP. Until cleanup actions are complete, the Covenant will apply to the property being investigated (and identified in the application).

The Commonwealth also agrees that the Covenant holder will not have to pay for contamination-related damage to natural resources on and around the site. Once property with a Covenant has been permanently cleaned up, the Commonwealth will not attach a lien to that property for recovery of any expenses the Commonwealth incurs as part of additional response actions for the release(s) addressed by the Covenant.

A Covenant will **not** bar damage claims brought by third parties (i.e., people who believe that contamination at a site has damaged them or their property). Nor will it relieve anyone from responsibility for cleaning up new releases of oil or hazardous materials that occur after the Covenant takes effect.

WHAT PROJECTS ARE ELIGIBLE:

- Projects must involve reuse or redevelopment for commercial or industrial activities.
- Any contaminated property located within an Economic Target Area designated by the Massachusetts Economic Assistance Coordinating Council is automatically eligible for a Covenant.
- A project not located within an Economic Target Area may be eligible if the Secretary of Economic Affairs determines that it presents an economic development opportunity.

A property that is not contaminated, or that has already been cleaned up to meet DEP's requirements, is not eligible for a Covenant.

WHO IS ELIGIBLE: A Covenant may be obtained by a prospective purchaser or prospective tenant who is willing to ensure that a contaminated property is properly cleaned up as required by the Massachusetts Superfund law (c. 21E) and regulations (the Massachusetts Contingency Plan, or MCP). An applicant cannot be a potentially responsible party for the cleanup of the site where the redevelopment project will be located when the application is submitted.

APPLICATION PROCESS: Application forms are available from the Massachusetts Office of Business Development and DEP's Regional Service Centers (see attached list for locations). Applications should be submitted to the Boston Office of the Massachusetts Office of Business Development. The application asks for basic information about the redevelopment project and the disposal site, and requires the applicant to certify:

- That she/he is a bona fide prospective purchaser or prospective tenant who has no legal responsibility for cleanup;
- That she/he is not currently subject to pending administrative or judicial enforcement actions for compliance with environmental laws and regulations (or the applicant must disclose all such actions, and must have established an approved compliance schedule); and
- That she/he is willing and able to ensure that the site is cleaned up in accordance with c. 21E and the MCP.

The Massachusetts Office of Business Development will review applications to determine if the project and site are eligible. The Department of Environmental Protection will review the certifications listed above, and determine whether there are any outstanding bills for publicly-funded response actions at the site for which the Covenant is sought, DEP oversight of past response actions, or fees (arrangements to resolve these debts must precede

a Covenant). The Executive Office of Environmental Affairs will also review the application and recommend whether the Covenant should include costs associated with natural resource damages created by the release of oil or hazardous materials.

Once eligibility is established and these related conditions are met, the Office of the Attorney General will issue a Covenant Not to Sue, which takes effect upon its issuance.

The pilot program has established a goal of processing applications within 30 calendar days of receipt by the Massachusetts Office of Business Development (although reviews will take longer for applications for sites requiring negotiations to resolve debts to the Commonwealth or outstanding environmental compliance issues). This should allow applicants to determine whether or not they will get a Covenant before they actually take title (or sign a lease) for property.

Please note: An applicant may take title to the property (or take possession via a lease) before the reviewing agencies decide whether to issue the Covenant Agreement. However, applicants should be aware that, if they do so and their application is denied, they will become potentially responsible parties under MGL c. 21E. Submittal of an application is not a guarantee that the Covenant Agreement will be provided.

ONCE THE COVENANT TAKES EFFECT: The buyer or tenant (Covenant holder) must make sure that all necessary response actions are performed at the site in compliance with the standards and timeframes established by the MCP. The Covenant holder may take advantage of all opportunities offered in the MCP to tailor the level of effort and cleanup to the needs of the particular site, including basing cleanup decisions on the uses of the property.

WHEN CAN A COVENANT BE REOPENED: There are two situations in which the Covenant can be reopened:

- before cleanup is completed, if DEP finds that response actions have not been conducted in substantial and material compliance with the MCP, or
- after cleanup is completed, if DEP finds that response actions did not meet the standard of care in effect at the time they were undertaken.

If a DEP audit identifies violations of MCP requirements, DEP will decide whether they warrant reopening the Covenant. If so, the Covenant holder (or her/his successor) will have an opportunity to correct violations and keep the Covenant in effect. If the violations do not warrant reopening the Covenant, the Commonwealth will fund corrective actions if necessary, and will not try to recover costs from the Covenant holder or successor.

If the Commonwealth finds that a Covenant was obtained through misrepresentation or fraud (e.g., false certification), the Covenant will be considered void.

FOR MORE INFORMATION:

- Applications are available at DEP Regional Service Centers and Massachusetts Offices of Business Development (see attached list for locations)
- Application packages include a list of areas that have been designated as "Economic Target Areas"
- Requirements for assessment and cleanup of contamination are established by M.G.L. c. 21E and the Massachusetts Contingency Plan (310 CMR 40.0000). Copies of the law and regulations are available from the State Bookstore in Boston and Springfield (Telephone: 617/727-2834 and 413/784-1378)
- Questions about the cleanup rules and requirements can be answered by the MCP Hotline (617/338-2255 in the 617 area code and outside of Massachusetts, 800/462-0444 if you are calling from the 508 or 413 area codes)
- An up-to-date list of Licensed Site Professionals ("LSPs", the experts licensed by the Commonwealth to manage site assessments and cleanups for private parties) is available from the Hazardous Waste Site Professional Board of Registration (617/292-5556).

ATTACHMENT

**MASSACHUSETTS OFFICE OF BUSINESS DEVELOPMENT
LOCATIONS**

| | |
|------------------------------|---|
| Statewide, Boston Region: | Massachusetts Office of Business Development One Ashburton Place, 21st Floor Boston, MA 02108 Telephone: 617/727-3206 Attention: Michael Hogan, Executive Director Gene Gebolys, Regional Director |
| Western Region: | One Armory Square c/o Springfield Technical Community College Springfield, MA 01105 Telephone: 413/784-1580 Attention: Bruce Stebbins, Regional Director |
| Central Region: | 340 Main Street Worcester, MA 01608 Telephone: 508/792-7506 Attention: Nancy Jackson, Regional Director |
| Northeast Region: | 600 Suffolk Street Lowell, MA 01854 Telephone: 508/970-1193 Attention: Jeff King, Regional Director |
| Southeast Region: | UMass - Dartmouth Dartmouth, MA 02747 Telephone: 508/997-1438 Attention: Gordon Carr, Regional Director |

DEP REGIONAL SERVICE CENTER LOCATIONS

DEP Regional Service Centers are located in each of the agency's four regional offices:

Western Region
436 Dwight Street, Suite 402
Springfield, MA 01103
Telephone: 413/784-1100
Fax: 413/784-1149

Central Region
75 Grove Street
Worcester, MA 01605
Telephone: 508/792-7650
Fax: 508/792-7621

Southeast Region
20 Riverside Drive
Lakeville, MA 02347
Telephone: 508/946-2700
Fax: 508/947-6557

Northeast Region
10 Commerce Way
Woburn, MA 01801
Telephone: 617/932-7677
Fax: 617/932-7615

Department of Environmental Protection Addresses



DEP Boston
One Winter Street
Boston, MA 02108
Telephone: 617-292-5500
Fax: 617-556-1049
TDD: 617-574-6868

William X. Wall Experiment Station[†] Office of Watershed Management[‡]
37 Shattuck Street
Lawrence, MA 01843
Fax: 508-688-0352
Division of Environmental Analysis
Telephone: 508-682-5237
Air Quality Surveillance
Telephone: 508-975-1138

P.O. Box 116
N. Grafton, MA 01536-0116
Telephone: 508-792-7470
Fax: 508-839-3469

Millbury Training Center^{*}
Route 20
Millbury, MA 01527
Telephone: 508-756-7281
Fax: 508-755-9253
Residuals Sludge Management
Telephone: 508-752-8648
WWT Operator Certification
Telephone: 508-756-2214



DEP Western Region
436 Dwight Street
Suite 402
Springfield, MA 01103
Telephone: 413-784-1100
Fax: 413-784-1149

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|---------------|------------------|--------------|------------------|--------------|------------------|
| Adams | Colrain | Hampden | Monroe | Pittsfield | Tyringham |
| Agawam | Conway | Hancock | Montague | Pinefield | Waitsfield |
| Allard | Cummington | Hathfield | Montgomery | Richmond | Warren |
| Amherst | Dalton | Heath | Monson | Roxbury | Warwick |
| Ashfield | Deerfield | Hinsdale | Mount Washington | Russell | Washington |
| Becket | Easthampton | Holland | New Ashford | Sandisfield | Wendell |
| Belchertown | East Longmeadow | Holyoke | New Marlborough | Savoy | Westfield |
| Bernardston | Egremont | Huntington | New Salem | Shelburne | West Springfield |
| Blandford | Erving | Lanesborough | North Adams | Shutesbury | West Stockbridge |
| Brimfield | Florida | Lee | Northampton | Southampton | Whately |
| Buckland | Gill | Lenox | Northfield | South Hadley | Wilbraham |
| Charlemont | Goshen | Leverett | Orange | Southwick | Williamsburg |
| Cheshire | Granby | Leyden | Otis | Springfield | Williamstown |
| Cheshire | Granville | Longmeadow | Palmer | Stockbridge | Windsor |
| Cheshirefield | Great Barrington | Longmeadow | Pelham | Sunderland | Wentworth |
| Chicopee | Greenfield | Ludlow | Peru | Tolland | |
| Clarksburg | Hadley | Middlefield | | | |



DEP Central Region
75 Grove Street
Worcester, MA 01605
Telephone: 508-792-7650
Fax: 508-792-7621
TDD: 508-767-2788

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|------------|-----------------|-------------|------------------|--------------|-----------------|
| Acton | Charlton | Hopkinton | Millbury | Rutland | Uxbridge |
| Ashburnham | Canton | Hubbardston | Millville | Shirley | Warren |
| Ashby | Douglas | Hudson | New Braintree | Shrewsbury | Weber |
| Athol | Dudley | Holliston | Northborough | Southborough | Westborough |
| Auburn | Dunstable | Lancaster | Northbridge | Southbridge | West Boylston |
| Ayer | East Brookfield | Lacaster | North Brookfield | Spencer | West Brookfield |
| Barre | Fitchburg | Leominster | Oakham | Starling | Westford |
| Bellingham | Gardner | Littleton | Oxford | Stow | Westminster |
| Berlin | Grafton | Lunenburg | Paxton | Sturbridge | Winchendon |
| Blackstone | Groton | Marlborough | Pepperell | Sutton | Worcester |
| Bolton | Harvard | Maynard | Petersham | Templeton | |
| Boxborough | Hardwick | Mashpee | Philipston | Townsend | |
| Boynton | Holden | Mendon | Princeton | Tyngsborough | |
| Brookfield | Hopedale | Mitford | Royalston | Upton | |



DEP Southeast Region
20 Riverside Drive
Lakeville, MA 02347
Telephone: 508-946-2700
Fax: 508-947-6557
TDD: 508-946-2795

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|-------------|------------------|------------|--------------------|--------------|------------------|
| Abington | Dartmouth | Freetown | Mattapoisett | Provincetown | Tisbury |
| Acushnet | Dennis | Gay Head | Middleborough | Raynham | Truro |
| Attleboro | Dighton | Gosnold | Nantucket | Rehoboth | Wareham |
| Avon | Dudbury | Halifax | New Bedford | Rochester | Wellesley |
| Barnstable | Eastham | Hanover | North Attleborough | Rockland | West Bridgewater |
| Berkeley | East Bridgewater | Hanson | Milton | Sandwich | Westport |
| Bourne | Easton | Hanwich | Norton | Schultz | West Tisbury |
| Brewster | Edgartown | Kingston | Noxwells | Seabrook | Whitman |
| Bridgewater | Fairhaven | Lakeville | Orleans | Sharon | Wrentham |
| Brockton | Fall River | Mansfield | Pembroke | Somerset | Yarmouth |
| Carver | Falmouth | Merton | Plymville | Stoughton | |
| Chatham | Foxborough | Marshfield | Plymouth | Sparasse | |
| Chilmark | Franklin | Mashpee | Plympton | Taunton | |



DEP Northeast Region
10 Commerce Way
Woburn, MA 01801
Telephone: 617-932-7600
Fax: 617-932-7615
TDD: 617-932-7679

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|------------|------------|-----------------------|---------------|------------|--------------|
| Amesbury | Chelmsford | Hingham | Merrimac | Quincy | Waterville |
| Andover | Chelmsford | Holbrook | Methuen | Randolph | Walpole |
| Arlington | Cohasset | Hull | Middleton | Reading | Walsham |
| Ashland | Concord | Ipswich | Miles | Revere | Watertown |
| Bedford | Danvers | Lawrence | Milton | Rockport | Wayland |
| Belmont | Dedham | Lexington | Nahant | Rowley | Webster |
| Beverly | Dover | Lincoln | Natick | Salem | Wenham |
| Billerica | Dracut | Lowell | Needham | Salisbury | West Newbury |
| Boston | Essex | Lynn | Newbury | Saugus | Weston |
| Boxford | Everett | Lynnfield | Newburyport | Shamborn | Washwood |
| Braintree | Framingham | Malden | Newton | Somerville | Weymouth |
| Brockton | Georgetown | Manchester-By-The-Sea | Norfolk | Stoneham | Winchester |
| Burlington | Gloucester | Marblehead | North Andover | Sudbury | Wintrop |
| Cambridge | Groveland | Medfield | North Reading | Swampscott | Woburn |
| Canton | Hamilton | Medford | Nonrood | Tewksbury | |
| Carlisle | Haverhill | Melrose | Peabody | Topfield | |

Boynton Yards, Somerville

The Boynton Yards, historically, is one of Somerville's oldest industrial areas. In recent years, however, the area became plagued by illegal dumping.



During the environmental remediation of the Boynton Yards, numerous underground storage tanks (UST) had to be removed and the surrounding contaminated soil was disposed of at an asphalt batching facility.







Tires, construction debris, and "white goods" typified the illegal dumping present at the Boynton Yards.



The Boynton Yards today after completion of building demolitions, environmental clean up, and roadway construction.



